OUR CORNER.

EDITED BY

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Volume III., 1884.

LONDON:
FREETHOUGHT PUBLISHING COMPANY,
63, FLEET STREET, E.C.

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Our Corner.

January 1, 1884.

Autobiographical Sketches.

By Annie Besant.

I am so often asked for references to some pamphlet or journal in which may be found some outline of my life, and the enquiries are so often couched in terms of such real kindness, that I have resolved to pen a few brief autobiographical sketches, which may avail to satisfy friendly questioners, and to serve, in some measure, as defence against unfair attack.

On October 1st, 1847, I made my appearance in this "vale of tears," "little Pheasantina," as I was irreverently called by a giddy aunt, a pet sister of my mother's. Just at that time my father and mother were staying within the boundaries of the City of London, so that I was born well "within the sound of Bow bells."

Though born in London, however, full three quarters of my blood are Irish. My dear mother was a Morris—the spelling of the name having been changed from Maurice some five generations back—and I have often heard her tell a quaint story, illustrative of that family pride which is so common a feature of a decayed Irish family. She was one of a large family, and her father and mother, gay, handsome, and extravagant, had wasted merrily what remained to them of patrimony. I can remember her father well, for I was fourteen years of age when he died. A

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bent old man, with hair like driven snow, splendidly handsome in his old age, hot-tempered to passion at the lightest provocation, loving and wrath in quick succession. As the family grew larger and the means grew smaller, many a pinch came on the household, and the parents were glad to accept the offer of a relative to take charge of Emily, the second daughter. A very proud old lady was this maiden aunt, and over the mantel-piece of her drawing-room ever hung a great diagram, a family tree, which mightily impressed the warm imagination of the delicate child she had taken in charge. It was a lengthy and well-grown family tree, tracing back the Morris family to the days of Charlemagne, and branching out from a stock of "the seven kings of France." Was there ever yet a decayed Irish family that did not trace itself back to some "kings"? and these "Milesian kings"—who had been expelled from France, doubtless for good reasons, and who had sailed across the sea and landed in fair Erin, and there had settled and robbed and fought—did more good 800 years after their death than they did, I expect, during their ill-spent lives, if they proved a source of gentle harmless pride to the old maiden lady who admired their names over her mantel-piece in the earlier half of the present century. And, indeed, they acted as a kind of moral thermometer, in a fashion that would much have astonished their ill-doing and barbarous selves. For my mother has told me how when she would commit some piece of childish naughtiness, her aunt would say, looking gravely over her spectacles at the small culprit: "Emily, your conduct is unworthy of the descendant of the seven kings of France." And Emily, with her sweet grey Irish eyes, and her curling masses of raven-black hair, would cry in penitent shame over her unworthiness, with some vague idea that those royal, and to her very real ancestors, would despise her small sweet rose-bud self, as wholly unworthy of their disreputable majesties. But that same maiden aunt trained the child right well, and I keep ever grateful memory of her, though I never knew her, for her share in forming the tenderest, sweetest, proudest, purest, noblest woman I have ever known. I have never met a woman more selflessly devoted to those she loved, more passionately contemptuous of all that was mean or base, more keenly sensitive on every question of honor, more iron in will, more

sweet in tenderness, than the mother who made my girlhood sunny as dreamland, who guarded me until my marriage from every touch of pain that she could ward off, or could bear for me, who suffered more in every trouble that touched me in later life than I did myself, and who died in the little house I had taken for our new home in Norwood, worn out ere old age touched her, by sorrow, poverty and pain, in May, 1874.

Of my father my memory is less vivid, for he died when I was but five years old. He was of mixed race, English on his father's side, Irish on his mother's, and was born in Galway, and educated in Ireland ; he took his degree at Dublin University, and walked the hospitals as a medical student. But after he had qualified as a medical man a good appointment was offered him by a relative in the City of London, and he never practised regularly as a doctor.

In the City his prospects were naturally promising ; the elder branch of the Wood family, to which he belonged, had for many generations been settled in Devonshire, farming their own land. When the eldest son William, my father, came of age, he joined with his father to cut off the entail, and the old acres were sold. Meanwhile members of other branches had entered commercial life, and had therein prospered exceedingly. One of them had become Lord Mayor of London, had vigorously supported the unhappy Queen Caroline, had paid the debts of the Duke of Kent, in order that that reputable individual might return to England with his Duchess, so that the future heir to the throne might be born on English soil ; he had been rewarded with a baronetcy as a cheap method of paying his services. Another, my father's first cousin once removed, a young barrister, had successfully pleaded a suit in which was concerned the huge fortune of a miserly relative, and had thus laid the foundations of a great success ; he won for himself a vice-chancellorship and a knighthood, and then the Lord Chancellorship of England, with the barony of Hatherley. A third, a brother of the last, Western Wood, was doing good service in the House of Commons. A fourth, a cousin of the last two, had thrown himself with such spirit and energy into mining work, that he had accumulated a fortune. In fact all the scattered branches had made their several ways in the world, save that elder one to which my father belonged. That had

vegetated on down in the country, and had grown poorer while the others grew richer. My father's brothers had somewhat of a fight for life. One has prospered and is comfortable and well-to-do. The other led for years a rough and wandering life, and "came to grief" generally. Some years ago I heard of him as a store-keeper in Portsmouth dock-yard, occasionally boasting in feeble fashion that his cousin was Lord Chancellor of England, and not many months since I heard from him in South Africa, where he has secured some appointment in the Commissariat Department, not, I fear, of a very lucrative character.

Let us come back to Pheasantina, who, I am told, was a delicate and somewhat fractious infant, giving to both father and mother considerable cause for anxiety. Her first attempts at rising in the world were attended with disaster, for as she was lying in a cradle, with carved iron canopy, and was for a moment left by her nurse in full faith that she could not rise from the recumbent position, Miss Pheasantina determined to show that she was capable of unexpected independence, and made a vigorous struggle to assume that upright position which is the proud prerogative of man. In another moment the recumbent position was re-assumed, and the nurse returning found the baby's face covered with blood, streaming from a severe wound on the forehead, the iron fretwork having proved harder than the baby's head. The scar remains down to the present time, and gives me the valuable peculiarity of only wrinkling up one side of part of my forehead when I raise my eyebrows, a feat that I defy any of my readers to emulate. The heavy cut has, I suppose, so injured the muscles in that spot that they have lost the normal power of contraction.

My earliest personal recollections are of a house and garden that we lived in when I was three and four years of age, situated in Grove Road, St. John's Wood. I can remember my mother hovering round the dinner-table to see that all was bright for the home-coming husband; my brother—two years older than myself—and I watching "for papa;" the loving welcome, the game of romps that always preceded the dinner of the elder folks. I can remember on the first of October, 1851, jumping up in my little cot, and shouting out triumphantly: "Papa! mamma! I am four years old!" and the grave demand of my

brother, conscious of superior age, at dinner-time: "May not Annie have a knife to-day, as she is four years old?"

It was a sore grievance during that same year 1851, that I was not judged old enough to go to the Great Exhibition, and I have a faint memory of my brother consolingly bringing me home one of those folding pictured strips that are sold in the streets, on which were imaged glories that I longed only the more to see. Far-away, dusky, trivial memories, these. What a pity it is that a baby cannot notice, cannot observe, cannot remember, and so throw light on the fashion of the dawning of the external world on the human consciousness. If only we could remember how things looked when they were first imaged on the retinæ; what we felt when first we became conscious of the outer world; what the feeling was as faces of father and mother grew out of the surrounding chaos and became familiar things, greeted with a smile, lost with a cry; if only memory would not become a mist when in later years we strive to throw our glances backward into the darkness of our infancy, what lessons we might learn to help our stumbling psychology, how many questions might be solved whose answers we are groping for in vain.

(To be continued.)

Those Bad Men, the Quakers.

In England, in the seventeenth century, Quakers were, by universal consent, bad men. They were rejected as witnesses; they were pilloried; they were imprisoned; their goods were forfeited; they were whipped through the streets at the cart's tail. Judges described them as "horrid blasphemers." Their character was considered so bad that the New England Independents, hearing that two Quaker women were on board a vessel just arrived in harbor, took them to prison, stripped them, and flogged them. Three other Quaker women were flogged by these pious Christians through eleven towns, a distance of eighty miles. Three men and one woman were hanged for their Quakerism. They were sold from Bristol as slaves to serve in the sugar plantations, and were generally regarded as bad and disreputable people, who were lucky if only put in the stocks or beaten in the

streets. Three hundred and sixty-nine Quakers died in gaol within a few years, and 4,200 were in prison at one time. In this country to-day members of the Society of Friends are cabinet ministers, judges of the High Court of Justice, and one is even now Lord Mayor of the City of London. In the Southern parts of the United States there are some Quakers who have still to suffer from bad repute. Elias Hicks was an Abolitionist Quaker. To be an Abolitionist was, down South, much the same as being an Atheist—in fact, anti-Slavery men were denounced as Atheists—and since the abolition of slavery a representative was expelled from the Louisiana Legislature because he was a Hicksite Quaker. George Fox and William Penn are to-day deservedly-honored names, not only amongst the Quakers, but by most English folk; yet Fox and Penn were unquestionably treated as "rogues and vagabonds" by those in authority in the reign of Charles II. George Fox tells us how he lay in gaol "where wind and rain came in," and how the judge ordered "that none should converse with me, as I was not a fit man to be conversed with."

These Quakers were indicted for unlawful meetings, for preaching in the streets, for not taking the oath of allegiance, and for blasphemy. They were all, men and women alike, extremely shrewed in their defences; and when Margaret Fell and George Fox were tried at Lancaster "for refusing the oath of obedience," they "quenched" more than one indictment with smart technical objections of dates and words, so that "they were all of a fret, both judge and justices." Some of the higher judges occasionally strove to temper the administration of harsh law with a faint spice of mercy, but the Church clergy, the country gentry, and the churchwardens showed scant courtesy to these Quaker people. Bishop Burnett tells us how these Quakers resisted the Conventicles Act, how they continued their meetings, and when seized all went to gaol together, refusing to pay any fines: "And as soon as they were let out they went to their meeting-houses again, and when they found these were shut up by order, they held their meetings in the streets before the door of these houses." "Some called this obstinacy, while others called it firmness, but by it they carried their point, for the Government grew weary of dealing with so much perverseness, and so began to let them alone.

In 1670 two Quakers were tried at the Old Bailey before Sam Starling, then Lord Mayor. If Lord Mayor Sam Starling had seen a Quaker in the hands of the constables on Parliament steps he would most certainly have done by the blaspheming Quaker as Quaker Robert Nicholas Fowler, now Lord Mayor of London, on the 3rd August, 1881, did by the blaspheming Atheist. He would have cried: "Kick him out!"

When, on the 3rd September, 1670, William Penn and William Mead appeared in court indicted "for a tumultuous assembly," they wore no hats, for some kindly gaoler had lifted off their hats so that Penn and Mead might not be fined for contempt of court. This did not suit Lord Mayor Sam Starling, who did not mean them thus to escape so easy a pit-fall, and in the 6th "State Trials," page 956, we find:

"MAYOR: Sirrah, who bid you put off their hats? Put them on again."

On this one of the officers replaced the hats on the heads of Penn and Mead, and then the Recorder took part. This Recorder seems to have been as bigoted as Sir Thomas Chambers, and as ignorant as Sir W. Charley.

"RECORDER: Do you know where you are?

"PENN: Yes.

"RECORDER: Do you not know that it is the King's Court?

"PENN: I know it to be a Court, and I suppose it to be the King's Court.

"RECORDER: Do you not know that there is respect due to the King's Court?

"PENN: Yes.

"RECORDER: Why do you not pay it, then?

"PENN: I do so.

"RECORDER: Why do you not pull off your hat, then?

"PENN: Because I do not believe that to be any respect.

"RECORDER: Well, the Court sets 40 marks apiece upon your heads, as a fine for your contempt of Court.

"PENN: I desire it might be observed that we came into the Courts with our hats off (that is, taken off), and if they have been put on since, it was by order of the Bench; and therefore not we, but the Bench, should be fined."

This did not avail; the fine was maintained and the trial proceeded, the real cause of offence being that Penn and Mead had spoken or preached in Gracechurch Street. Penn admitted that

he had spoken there, and argued very ably that he had in this done nothing unlawful. But the Old Bailey Court, which might well have been presided over by Mr. Justice North, was in no mood to tolerate anything like a reasonable defence.

"RECORDER: We must not stand to hear you talk all night.

"PENN: I design no affront to the Court, but to be heard in my just plea; and I must plainly tell you that if you will deny me Oyer of that law which you suggest I have broken, you do at once deny me an acknowledged right, and evidence to the whole world your resolution to sacrifice the privileges of Englishmen to your sinister and arbitrary designs.

"RECORDER: Take him away.—My lord, if you take not some course with this pestilential fellow to stop his mouth, we shall not be able to do anything to-night.

"MAYOR: Take him away, take him away; turn him into the bale dock."

And, after one unavailing protest from sturdy William Penn, "they rudely haled him into the bale dock, and proceeded with the trial in his absence." Penn's co-defendant, William Mead, ventured to talk Latin, on which the Mayor became uncontrollable.

"MAYOR: You deserve to have your tongue cut out."

And this was no mere empty form of words, for these bad men—these Quakers—had often their tongues cut, both in England and in Massachusetts, by their loyal church-going, and even chapel-going, brother Christians. Mead still arguing, the Recorder cried: "Pull him down! pull him down!" and the jury were called on for their verdict.

"CLERK: Look upon the prisoners at the bar; how say you? Is William Penn guilty of the matter whereof he stands indicted in manner and form, or not guilty?

"FOREMAN: Guilty of speaking in Gracechurch Street.

"COURT: Is that all?

"FOREMAN: That is all I have in commission.

"RECORDER: You had as good say nothing.

"MAYOR: Was it not an unlawful assembly? You mean he was speaking to a tumult of people there?"

Some of the jury seemed inclined to give way to the Court, but others stood out, at which the Recorder and Mayor "took great occasion to vilify them with most opprobrious language," and sent them back for a better verdict. They came again, this time with a verdict of "not guilty" as to Mead, and repeating the same

words as to Penn. This made the Court very angry, especially with the foreman and a juryman, Edward Bushel.

"MAYOR: What! will you be led by such a silly fellow as Bushel? an impudent canting fellow? I warrant you, you shall come no more upon juries in haste. You a foreman, indeed! I thought you had understood your place better.

"RECORDER: Gentlemen, you shall not be dismissed until we have a verdict that the Court will accept; and you shall be locked up without meat, drink, fire, and tobacco. You shall not think thus to abuse the Court. We will have a verdict, by the help of God, or you shall starve for it!"

Four more times were the jury sent back; four times came they with the same verdict. But on the fifth they gave in simple "not guilty" for both. The enraged Recorder for this verdict fined the jury "40 marks a man," and Penn and Mead, although acquitted, were again sent to Newgate, where the jury were also imprisoned in default of payment of their fines. The fine on the jury was by the Court of Queen's Bench declared to be illegal, and the whole of the jury were released.

Respectable Quakers like Lord Mayor Fowler may be reminded that against James Naylor and George Fox the churchmen of 240 years ago used very hard and very foul words. When Lord Mayor Fowler is denouncing the blasphemers to-day in gaol, he might be reminded that scores of Christian judges and magistrates, in the latter half of the seventeenth century, with equal coarseness and virulence, justified the wholesale incarceration of the members of the very sect to which he belongs.

CHARLES BRADLAUGH.

The Axolotl.

THE late Canon Kingsley puts into the mouth of a Government pupil-teacher an explanation of the word "amphibious" as derived "from *amphi*, a fish, and *bios*, a beast—namely, an animal supposed by our ignorant ancestors to be compounded of a fish and a beast, and which, like the hippopotamus, can't live on the land and dies in the water." A large modern dictionary which I possess defines the word "amphibia" as "the class of reptiles which includes the saurians, crocodiles, lizards, serpents, frogs, and turtles." The good Canon's little bit of pleasant satire will mislead no one; but I fear the dictionary's shadowy zoology will

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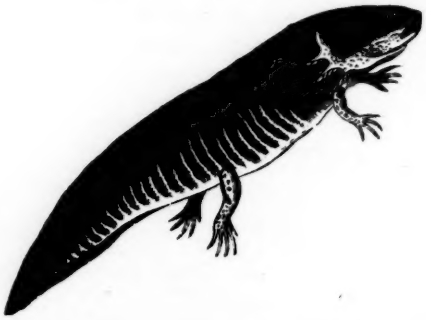
help to perpetuate erroneous popular ideas about the nature of amphibians. Yet most people are familiar with the life-history of a frog—how it begins as an egg, then becomes a tadpole, or loggerhead, breathing by gills arranged about its neck like frills; and how, presently, by the time it has lost its tail and gills, and acquired legs with which to leap out of the water, it has also acquired lungs to enable it to breathe and live out of the water. It is this double character which distinguishes amphibians from other animals: breathing water by means of gills in their larval condition, and breathing air by means of true lungs in the adult state. Thus they form a class intermediate between fishes which breathe by gills throughout their lives, on the one hand, and reptiles, which breathe by lungs from the first, on the other hand. It is true that the mud-fish exists several months in the year without water; but its swim-bladder has become a lung and communicates with the throat. This is a kind of link—*not* a missing one—between the fishes and the more highly developed amphibians. So also at the other end of the scale the black salamander of the Alps seems to connect the amphibians with the still higher class, reptiles; for not only are the ova of this creature hatched within the parent body, but the young advance so far as to cast their gills before emerging. It is very interesting to observe that even the human embryo, at a very early stage, exhibits rudiments of gill-clefts.

One of the most interesting and instructive of the amphibians is the axolotl of the Lake of Mexico. The peculiarity of this creature is that in the natural condition it retains its fringe of external gills to the end of its life, its lungs never so far developing as to make the creature independent of its water-breathing organs; while in a state of captivity it can be made to undergo

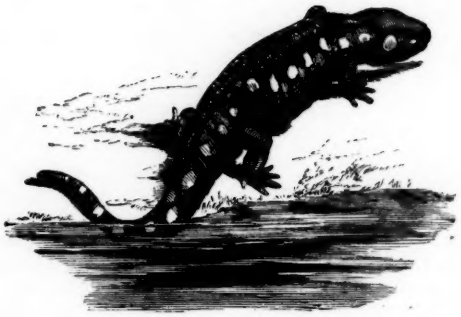


the characteristic metamorphosis. In external appearance the axolotl resembles the English newt or eft more than any other familiar form, save that it sometimes attains a length of nearly twelve inches. For several months it may have been seen in a tank at a dealer's in Covent-garden Market, where it is known as "the

devil fish;" and its appearance is, indeed, very striking. Its head is broad and large, and the creature tapers off into a long compressed tail, which, like that of an eel or eft, is finned above and below. It possesses four limbs, the anterior ones having four toes and the posterior ones five. The toes are partially webbed. On each side of the neck are three feathered processes which give the animal its very remarkable appearance. These curious processes are the branchiæ, or gills. In the Mexican market the axolotl is sold as a delicate article of diet. In Covent garden, as in its native haunts, it presents the apparent extraordinary anomaly of an animal breeding in the larval condition.

About half a dozen Continental naturalists have bestowed observations upon the metamorphosis of this animal, the most systematic, probably, being those of Professor Weissmann, of the University of Freiburg. Under his guidance Fraulein von Chauvin undertook the rearing of a number of larvæ which had been bred in tanks. She began on the 12th of June, 1874, with five larvæ about eight days old, which were kept in a glass globe, fed at first with daphnids and afterwards with larger aquatic animals. They all prospered well. At the end of June the anterior limbs began to appear in the stronger specimens, and on the 9th of July the hinder ones became visible. At the end of November one axolotl was observed to remain constantly at the surface of the water, and this led to the supposition that the right time had come for effecting the metamorphosis. Accordingly, this specimen was isolated in a large-sized vessel containing earth arranged in such a manner that when the vessel was filled with water only one portion of the surface of the earth was entirely covered with the liquid, and the creature in its wanderings was thus more or less exposed to the air. The water was gradually diminished on the following days, during which period the first changes made their appearance in the amphibian—the gills began to shrivel up, and the creature showed a tendency to seek the shallowest spots. On the 4th of December it forsook the water entirely and hid itself in some damp moss on the highest part of the earth. At this time it first cast its skin. Between the 1st and 4th of December the external appearance of this axolotl changed considerably. The gill tufts shrivelled up almost entirely, the dorsal crest almost completely disappeared, and the tail, which had hitherto been broad, became rounded, and similarly formed to that of a land salamander. The color changed from a grey-brown to a blackish hue; isolated spots, at first of a dull white, made their appearance, and in time increased in intensity. A few days afterwards the gill-clefts had closed entirely, and were no longer seen. The other larvæ appeared at the end of November to have kept pace in their development with No. 1—an indication also that they had arrived at the age when their change might be accelerated. They did not, however, show any sign of spontaneously leaving the water. But being submitted to the same treatment, they, with one exception, became transformed in

the same manner. The fifth was sickly, and occupied fourteen days instead of four in advancing far enough to enable it to leave the water, and it did not emerge until it cast its skin the fourth time. All the specimens lived, and in the following July were in vigorous health as full blown salamanders of the genus *amblystoma*. This account of the experiments conducted by Fraulein von Chauvin is given almost in her own words. But it yet remains



to give the explanation of Dr. Weissmann of these singular phænomena. It was for some time thought that the creature had been urged forward to a stage of development which its species had not otherwise reached. What made Weissmann recede from this opinion was the appearance of the living amblystomas bred from axolotl larvæ. The numerous details of which he had been previously in possession had given him no such vivid picture as the living animal presented of the deep-seated character of the transformation effected. It was not merely that shrivelling up of the gills which often takes place, unaccompanied by any extensive change, in axolotls kept in shallow water. It was a change under which they became quite different animals. The branchial clefts closed up; the dorsal crest completely disappeared; the aquatic tail became transformed into one like that of the lizards; and a very important alteration took place, not only in the color but in the histological character of the skin: the eyes became prominent, and perfect eyelids were formed; the toes lost their web-like appendages, and important changes in the dental system occurred. The structural differences between the axolotl and the amblystoma became, in fact, considerably greater than, and of more importance than, those between allied genera, and in some cases greater than between allied families. Now, such a development *per saltum* of the species is, as Dr. Weissmann says, inconceivable. For this theory leaves no room for the gradual adaptation from generation to generation of structure to environment which is such an important element in biological histories; no room for

variation, natural selection, or the survival of the fittest. No force with which we are acquainted is sufficient to impel such sudden changes in an animal's structure as that in a few days enable it to resume active life as an entirely new being, fitted for entirely new surroundings. It is clear some other interpretation must be sought for. Weissmann's opinion is that those amblystomas which have been developed in captivity from axolotls which do not in a state of nature assume the amblystoma form, are not progressive, but reversion forms; that the axolotls which now inhabit the Mexican lakes were amblystomas at a former geological (or better, zoological) epoch; but that, owing to changes in their conditions of life, they have reverted to the earlier perennibranchiate stage. The reasons given for this opinion may fall short of absolute demonstration, but at least they render the reversion hypothesis more admissible than the progressive one. Some species of *Siredon* (the scientific name of the axolotl) become transformed into the amblystoma form, and regularly propagate in that condition. It may appear paradoxical that an animal should be sexually mature in its larval condition; but the axolotl is not quite alone even here, for it is a fact well known to naturalists that under certain circumstances some tritons exhibit that power. The amblystomas bred from axolotls in captivity have mostly proved sterile, the ova being immature and the spermatozoa are described as incompletely motile. In one case, however, tadpoles were obtained. It must seem a still greater paradox to call that a reversion which is undoubtedly of higher development. Reversion, however, in its true sense, means a return to a form which has once existed.

Weissman asks why it should be considered inconceivable that at a very remote period the axolotl was adapted to a life on land; that through the direct and indirect action of changed conditions of life it gradually acquired the salamander form; but that subsequently, through new and unfavorable changes in the conditions of life, it again relapsed to the older form, or at least to one nearly related thereto. At any rate, such an assumption is opposed to no known facts, and is, moreover, the only feasible explanation of the facts before us. The investigator alluded to supposes as the probable reason why the axolotl ceased at some former period to transform itself into amblystoma, that geological changes took place which caused the atmosphere of the neighborhood to become too dry for the life of the animal as a terrestrial creature. It is known that the land-salamanders of the south of Europe avoid the hot and dry air of summer by undergoing a summer sleep below ground; and that in the elevated dry valleys of the Alps the black salamander is absent, while its nearest water-living allies exist there in abundance. A very significant structure, called the "intermaxillary gland," possessed by all land-amphibians, furnishes a glutinous secretion and serves to aid the capture of insect prey. It is usually absent from gilled amphibia; yet the axolotl exhibits this in a

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rudimentary form. This fact is supposed to establish the descent of these axolotls from a form which, living on land, found a use for the gland.[1] W. MAWER.

The Story of Ladislas Bolski.

(After the French of Victor Cherbuliez.)

CHAPTER XVII.—*(Continued).*

A CELL, twenty feet long, twelve feet wide, four grey walls, a loophole guarded by a double row of bars, a rickety table, two chairs, a door pierced with a wicket-hole, an old mattress in a corner, such is an exact inventory of the lodging provided for me by the liberality of the Russian government. Various tiresome ceremonies had to be performed before I was allowed to take possession. I was questioned, searched, and my name entered in the gaoler's book, and then after being led along a number of dismal passages, I entered my new home. What I then felt, I can scarcely explain. From the bottom of my heart broke forth a cry, or rather a howl, of savage delight which must have highly astonished my gaolers and the officials watching at my door.

It was sad and dreary, my poor cell, lighted feebly by a tallow candle, and containing a fine crop of fungi. It was a true dungeon; it looked like one, smelt like one; in the air one could feel the drawn-out *ennui*, the weary languor of a limitless captivity, the softening of a brain which grew mouldy as it lay. Many griefs had dwelt in that cell before me; they had written their stories, engraved their memories and their presentiments on its walls—covered with inscriptions, with names, with verses, with pictures—sad and foreboding walls which only told of nocturnal arrests, of tortures, of the knout, of Siberia, of Poland crucified.

Yet, as I completed the circuit of my prison, I fell on my knees in a transport of delight, I covered the walls with my kisses. They were my saviors and my protectors, keeping guard over me; they held dishonor at bay and defended me against the cowardice of my heart, the treachery of my feelings. They said to me: "Long as you may, you cannot see her again."

The gaoler, who was watching me through the wicket-hole, concluded that I had fallen into a high fever, and ran to fetch the prison doctor, who examined and questioned me. I assured him that I was perfectly sane.

"Still," he remarked, "a man who shows intense delight on entering prison . . . ."

"That is a secret," I answered, and I asked him ironically whether there was any law in Russia which forbade a prisoner to kiss the walls of his cell.

[1] Our grateful acknowledgments are due to Dr. Andrew Wilson for his kind permission to copy the illustrations from his "Chapters in Evolution."

He retired, murmuring : " When the saucepan boils, it makes the lid jump. Will it still be boiling to-morrow ? "

He was only too right. Great emotions do not last. On the following day my mood changed ; I became reflective, calculating, feeling the price I had paid to save my honor, sighing for active suffering, for troubles which were occupations. Unhappily my judges were in no hurry to try me, and I passed three weeks *tête à tête* with myself, without seeing a human face save that of the gaoler who brought me my meals. I revenged myself on him ; I rallied him, I abused him, I burst out into invectives against him and Holy Russia, I did all I could to irritate him. But I lost my pains, for he took it all good-naturedly. The habit of his work, assisted by nature, wrapped him from head to heel in a cloak of imperturbable phlegm. Whatever I said, he nodded amiably, shrugged his shoulders, or laughed till his great mouth opened wide as a furnace, disclosing his thirty-two teeth. To all my attacks he answered with proverbs : " He who has no patience has nothing." " Flies are not caught with vinegar nor the moon by teeth." "As you make your bed, so you must lie on it." "He who dances must pay the piper." I began to detest his papier-maché face and bent back ; there is nothing more objectionable than the back of a man one dislikes.

Gradually I fell into a profound melancholy, a sad and silent despair. The tragic end of Levitoux, of the young Pole who burned himself alive in his bed, came back to my mind. I resolved I would imitate his example, and gradually the fancy grew into a fixed idea. My outbursts of temper, my violent sallies, had caused my guards to mistrust me considerably, and the eye of the gaoler was constantly at my wicket-hole. One night, however, I thought I could hear him snoring, and I snatched up my candle and set fire to the straw pallet. It had just begun to blaze when the door opened noisily, and my careful watcher rushed in and emptied a pail of water over my bed and myself, extinguishing the flames. After that, I was not allowed a light during the night, and each hour someone looked in to see what I was doing.

At last one evening an aide-de-camp appeared, accompanied by four soldiers, and announced that he had orders to lead me before the Commission of Enquiry. An electric shock went through me ; I sprang to my feet off the pallet on which I was lying, and followed the aide-de-camp.

We reached a large hall, in the midst of which was a long table covered with a green cloth. Round this table sat about a dozen officers of various grades, presided over by a white haired general. They were smoking, laughing, chatting, playing practical jokes on each other. Gradually silence was established, I was motioned to a seat, and the old general Milef addressed me gently enough. I promised myself to make him change his tone.

He pointed out to me that the situation was serious, and that it depended on me to change it by the sincerity of my confession

and by my repentance. "You bear an honorable name," he said; "a name which until late years was without reproach; your paternal grandfather, whom I knew, left behind him in Russia the most unblemished memory. He bequeathed to his son his loyalty and his wisdom. Unhappily, your father allied himself in marriage with a family in which fanaticism was hereditary. He was, it seems, of a weak character. Your mother upset his brain, persuaded him to emigrate, and prevented his return to Russia when he was summoned. It was she who compelled him to enrol himself in the Revolutionary army, and sent him to perish in Hungary on one of those battle-fields on which courage is a crime. You see that we are well acquainted with your family history."

I could have thrown myself into the general's arms; he did not know all the history of my father. I replied: "Your excellency is good enough to inform me that my father was a fool, my mother a criminal. Is there nothing more for me to learn?"

He bit his lips, but did not lose his temper.

"You might have chosen to be your grandfather's grandson," he answered; "a man of good sense and good feeling. You have preferred to be the son of your mother. You were free to choose. Still, you are very young, barely three-and-twenty. You may come back to better thoughts. The tribunal is indulgent, and we should be glad to welcome the stray sheep back to the fold. Come! redeem the past! Let your confessions repair your faults. On your first interrogation you refused to name your accomplices. We have left you alone during three weeks to give you leisure for reflexion. . . ."

"My accomplices!" I interrupted, "How can I name them? I have none."

"Then give the names of all the people you know here."

I began a long enumeration of all the Russian officers I had shaved or curled. He stopped me with an impatient gesture.

"You have visited at Polish houses, and formed secret friendships. . . ."

"I have no secret friendships. I have only public enmities. You can read them in my eyes."

"Take care," he answered, after a moment's silence. "You take pleasure in aggravating your position, and you discourage our clemency. Will you deny that you were sent hither by the Democratic Society, and that you are one of its emissaries?"

"I have received no mission but from myself. I have taken no counsel save that of the longing to see my fatherland, of the resolution I had formed that I would one day fight for her deliverance. I had thought that the hour had come, and that Poland would soon arise. I succeeded in obtaining a passport, I crossed the frontier, and I waited."

"Your calculations and previsions were very imprudent. It is quite true that mischief-makers are about. Fogs are never absent from this country. But do you fancy that we have any

fear of you and of your subterraneous plans? To make security more secure we have to-day arrested twenty suspected persons. I am going to read out the list. It is possible that we may have caught in our net good fish as well as bad. If we have in error arrested any innocent persons, it is for you to speak out in their defence. Humanity should compel you to do so."

"The trap is too clumsy to fall into," I retorted, shrugging my shoulders.

None the less did he read out the list aloud, stopping at every name to give me time to speak. It contained the names of few of my acquaintances, and none of my sworn comrades.

"I rejoice to think," I cried, "that all those you have named are, like me, guilty of loving their country and of hating tyranny."

"What can you hope to gain," he asked, "by your denials and your pretended ignorance? Your own case must appear to you very serious, the secrets in your keeping must weigh on you very heavily, since you tried to escape our investigation by committing suicide."

"I tried to kill myself," I answered, "because I could not forgive myself for having placed myself in a position in which I could not injure the butchers of my country." At this, the general flew into a violent passion, and striking his fist on the table, he cried: "Do you know to whom you are speaking, and that we have means by which we can recall the insolent to respect? You had better remember Konarski!"

I rose abruptly. "I know them, your means!" I cried. "You have, indeed, for such means an inventive genius, a fertile imagination. Others have invented handicrafts, railways, the electric telegraph, all the controlling of matter by mind. You have invented the batogs, the knout, exile—that hypocritical disguise of death—all that brutalises the heart, all that slays the intellect. Do with me as you will. I despise your rods and your triangles, your kibitkas and your Siberia. I came to Poland with my head full of dreams. They were my children; I had nurtured them on my purest hopes, my noblest thoughts. My eaglets are dead ere they gaze at the sun; what, then, matter to me torture and death! Any anguish you may inflict on me will be sweet beside the rage that I feel in gazing at my disarmed hands, at my empty palms from which vengeance has escaped."

At these words there was a tumult. My judges rose from their seats. The general sprang towards me, his eyes blazing. "Insolent scoundrel!" he yelled. "You have in you ten thousand devils and all your maternal ancestors. Ah! you would try the torture? By all means! You can gratify your fancy!"

He called the aide-de-camp who had escorted me, and whispered in his ear. I was dragged into another hall, and there my feet were rivetted in heavy irons, and my hands were bound in handcuffs so tightly drawn that the cord bit into the flesh, and cut my wrists. They then carried me into a subterranean dungeon,

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pitch-dark, and so narrow and low that I could neither turn in it nor stand upright. I passed two weeks there, living on crusts and stagnant water.

My dungeon was pleasanter to me than my cell. I was not alone there. My chains, my handcuffs, hunger, thirst, fever, kept me company; we were friends together; I spoke to them, they to me. Sometimes I cried, I sang:

"There—not in fairy story—
Love threw a kiss.
There—not in fairy story—
Threw it thee,
Threw vainly."

I saw the wall open, and love flew away, and I burst into roars of laughter. Three times was I carried before the Commission of Enquiry; three times I maintained my rebellious aspect; not a syllable could be learned from me, and I was returned to my dungeon after each examination.

One morning an officer woke me at dawn, and led me to a small court, surrounded by high walls. There six soldiers were awaiting me, their muskets shouldered.

"I have received orders to have you shot," said the officer. "Still, you may obtain a reprieve, and perhaps a remission of your punishment, if you will confess."

"Be quick," I answered, "and don't tire your men."

My eyes were bandaged.

"Before giving the order to fire," said the officer, "I will count twenty. Reflect! one word and your life is saved."

He began counting in slow, measured tones. When twenty was reached, "Present!" he cried. "But before saying 'Fire!' I will count ten."

I sang as loudly as I could;

"Threw it thee,
Threw vainly."

"What a madman!" ejaculated the officer.

I had just tasted the sweetness of coming death, when the cup was struck from my lips. My eyes were unbandaged, and despite my resistance, I was carried back, struggling and yelling, to my dungeon. On the evening of that day I was removed from it, no more to return, and was taken back to my first cell.

I passed the night stretched on my pallet with my eyes open. I wondered what they were going to do with me. Beside me stood a spectre—Life. "You are mine," she said, with a ferocious grin. "Do you fancy that I let my prey loose so easily? You do not guess what I have in reserve for you. You do not know the best parts of my budget."

I kept on repeating to myself: "Begin life over again? I have lost the fashion of it; I do not feel sufficient strength."

And I cried like a child over the idea that my exhausted

strength and my enfeebled nerves might betray my courage, and that my executioners might betray me into some ambush, and thus extort my secrets. I tried to utilise the little strength of brain which remained to me so as to go over the tests to which they might subject me, the perils to which my honor was to be exposed. How shortsighted and feeble is the imagination of man! How ignorant it is of our to-morrows! Mine looked towards every point of the compass to discover from which side the enemy would come. But he never comes along the road which we watch, and while we are seeking his approach in every direction he is already close behind us. Of all the perils that I surmised, not one was to be feared. They might have killed me ten times over without wringing from me any denunciation of my friends. But dishonor has so many faces! I was far enough from guessing that which it would assume to trample me under its feet.

In the morning, towards ten o'clock, I received a quite unexpected visit. An officer whose face I did not know, Major Kriloff, entered my cell, followed by the gaoler and by a locksmith. He freed me from my irons, and took off my handcuffs. My swollen hands and bleeding wrists startled the major. He sent at once for a doctor, who dressed my wounds, and then questioned me, but I answered not a word. In the state of weakness and prostration to which I had been reduced I suspected everyone, and myself most of all; the most inoffensive curiosity, the most hearty benevolence, seemed to me full of snares; I had made a vow of silence.

"He has suffered terribly," remarked the major.

"Bah!" answered the doctor, "it is only his nervous system which has suffered. This lad has a heart and a constitution of iron. Feed him with tonics, broths, and meat, and in three days he will be well."

I was at once supplied with some soup, which I found delicious, a large slice of beef of which I made but a mouthful, and a bottle of wine which I speedily emptied. The major had only retired in order to leave me at liberty to enjoy my food. An hour later he reappeared and addressed several questions to me, which I answered dryly and in monosyllables. He would not be repelled. There was a softness in his voice, a sweetness in his look, which contrasted with the military stiffness on his figure and bearing. His face commanded confidence, for it bore the imprint of a noble soul, of which there seem to be many in all the ranks of the Russian army. Nevertheless, he found it hard work to tame me, for I steeled myself against the sympathy with which he inspired me. At last he said: "I have some good news for you."

I started up. "Have you come to tell me that I am to be executed within four-and-twenty hours?" I cried. "Oh, I will bless you as my savior. But this time I must be shot outright. I only ask to die; life is an abomination to me. Season my death, if

you will, with every imaginable torture: the fish will make amends for the sauce."

He rose and said quietly: "Your nerves are upset. You need rest, and I will tell you my news when you are calmer. Meanwhile, I must order your supper, and I will try to send one you will enjoy. I trust you will sleep well to-night, and to-morrow we will talk."

He returned on the following morning, and having asked how I was, inquired: "Do you want to know my news?"

I answered in a tone of complete indifference: "Tell me, if you like. I am not curious."

"I am desired to inform you that the Commission of Enquiry has obtained from the imperial clemency the pardon of twelve of the persons arrested last month. It rests with you to . . . . "

I interrupted him by a burst of laughter. "You have come to offer me a pardon? What language are you using? Pardon is only for criminals! It is a crime to love one's country? it is a crime to be born a Pole?"

"Pardon," he answered. "I have not come here to discuss politics. Whither would they lead us? Questions of right are complex, and we might argue for a long time. There is a Russian justice and a Polish justice. Only the Supreme Judge can decide between us."

"And by what meannesses am I to buy the pardon of the only meritorious action I have ever done?"

"If any meannesses were to be demanded from you," he answered gently, "I should not have undertaken my present task. All that is asked from you is that you will sign a paper declaring that you regret joining in a conspiracy against your legitimate sovereign, and promising not to participate in any future manœuvres against his authority."

I leaped to my feet. "Are you speaking seriously? Such a declaration, such a promise, would dishonor me for ever. What is infamy, if liars and cowards are not infamous? What! I am to declare regret for doing my duty, and to promise —. That is enough. Never!"

He was silent for a moment. "Do not lose your temper," he replied. "Your passion has already injured you and has drawn upon you severity which I regret. And yet your judges are well disposed towards you. They consider your youth and your courage. They desire to see in your blameworthy attempt only youthful giddiness, headstrong will, imagination led astray by evil counsels. You know that General Mileff was your grandfather's friend. He thinks that good blood cannot lie, and that trust may be put in your family. He hopes that you will at last hear reason, and will become a true Bolski."

"A true Bolski!" I cried out furiously. "Why remind me that I must rehabilitate my family? There was a spot on my name, and I swore to wash it out in my blood."

"The misfortune is," he said with a sad smile, "that no one means to kill you."

Then rising, he went on: "There is no hurry; you had better think it over. Meanwhile, if I can do anything for you, I am at your service. Time must hang heavy on your hands, and there is nothing better with which to while it away than good books and good cigars. Allow me to give you this double pleasure."

An hour later I received from him a packet of tobacco, some cigarette papers, two volumes of the "History of Russia" by Karamsine, and the biography of General Munnich.

The major did not reappear for two days. He then shook hands with me warmly, asked if I had read Karamsine and had enjoyed smoking. Then, looking at me closely: "You are still a little pale, but you have pulled up well. Let me see your hands. Ah! they are healing marvellously. The doctor was right; you have a splendid constitution." And he added: "Have you thought matters over?"

I took his arm and led him to the other end of my cell, where I shewed him, traced on the wall by some unknown hand: *Dulce et decorum est pro patriâ mori.*

"I agree with the inscription," he answered, "Without doubt, it is fine to die for one's country. You are always coming back to that. You shewed the other day that you despised death; but do be good enough to consider that whatever happens your life is safe. You have to choose between the pardon offered you and exile."

I replied: "When shall I start. Is the kibitka there? I am ready."

He made two or three turns up and down the cell. "I could understand your obstinacy," he replied, "if you had any chance of serving the cause dear to you with your arm or your blood. But it is not so. Suppose there should be an armed revolt in Poland a few months hence, where will you be? In Siberia, condemned to cruel sufferings which serve no one, and for which no one will thank you. A long and useless martyrdom, an obscure and unknown death, that is what awaits you."

"What are you saying?" I retorted. "Are there any useless martyrdoms? The only seed which never disappoints the sower is that of grief. The winds which blow from Siberia are sowers which scatter over the furrows of Poland a bloody seed. This seed germinates silently; one day it will appear, and our barns will have no room for our glorious harvest."

"I might answer that those who sow the wind will reap the whirlwind, but I prefer to represent to you. . . ."

I stopped him short by asking: "One word will be enough. What would you do in my place?"

He hesitated a moment, and then said; "I am charged with a duty, and I am doing my best to discharge it. My personal opinions have nothing to do with the matter."

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"You are a good fellow," I answered, clasping his hand. And I added: "No, no, never. Do not let the question be raised between us again."

"As you will," he said, "but I have orders to leave this paper with you. Oh! you may as well take it. It won't burn your fingers. What are you afraid of?"

The paper he held out to me was the declaration which I was to sign to obtain my pardon. "It will be enough for you to write at the foot the fourteen letters of your name," he added, "and you are free. At your age liberty is a fine thing."

I took the paper between my finger and thumb with as much disgust as if it had been the rags of a leper, and dropped it, folded as it was, into the drawer of my table. After all, I was not sorry it was there. That paper was liberty, and during eight days I did not even feel tempted to look at it, to touch it, to unfold it.

Major Kriloff came each morning to enquire how I was, and to smoke a cigarette, but towards the end of the week two days passed without his visit, and I began to fear he was ill. On the third day, however, he came at about four o'clock in the afternoon, and from his pre-occupied air, I saw he had something to tell me.

"I must break my word to-day," he said, "and speak to you again about that paper. Have you signed it?"

"You want to know whether you may still respect me? Have no fear. If I have not torn the paper up, it is out of regard for the donor, but it may rot in the drawer before I shall look at it."

"Alas! it will not have time to rot. If you have not signed it by to-morrow morning at eight o'clock, the evening will see you on your way to Siberia."

"Good news! I am beginning to get very tired of this cell and of Karamsine, and I shall be glad to see something different."

"Patience. I am allowed to-day to give you some news that may, perhaps, modify your resolution. I fancy that you are moved to reject the offered pardon by anger against certain individuals. Your judges have severely punished your—audacity, shall I call it? and you have sworn to owe them nothing. It is a feeling I respect. But what would you say if you owed your liberty to the spontaneous intervention of a third party, and that third party a woman?"

I could not prevent a shiver. "A woman? A Russian, I suppose?"

"Well, what does that matter? You are determined to see in our poor Russia nothing but executioners and gaolers. I assure you that it also produces women, true women, all that is most womanly. The one of whom I am speaking, perhaps her name is not unknown to you, is the Countess de Lievitz."

I had strength to reply: "I do not know her." Fortunately my face was in the shade, and he could not guess at the cry I stifled on my lips.

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"She had been two days in K——," he continued, "when you were arrested, and your arrest was followed by some twenty others. Madame de Lievitz is compassionate, it seems, and the daughter of a merchant who was among the suspects, took it into her head to implore her aid. She went to the governor and was repulsed. She went off to Warsaw, and saw the lieutenant of the kingdom, who shewed her out. Then she said it was better to go to God than to his saints, and started for St. Petersburgh, where she obtained an audience of the emperor. What arguments she used I know not, but she returned in triumph with twelve blank pardons, duly signed. At her request the Commission of Enquiry pointed out the twelve prisoners thought least guilty. Among these were some fanatics, like yourself, who refused the offered pardon. Madame de Lievitz assumed the duty of persuading them. She is a very extraordinary person, a curious mixture of audacity and of sweetness. Perhaps she will work her greatest miracle to-day. I should not be in the least surprised if she came here."

At these words I made a gesture of fear, and losing my head I cried: "If you would do a kindness prevent that woman . . . . She here! she in my cell! oh no! that must not be! I will not see her! If I see her I am a lost man. . . The gaoler? where is the gaoler? I must speak to him. . . He must prevent her coming in. What is the use of prisons if women are allowed to visit them? . . . I denounced myself; I said: 'Arrest Ladislas Bolski.' I wanted to put my honor in safety. These walls are thick: this window is barred. I could not guess that the woman would come in by the door. . . . Oh! my door is mine. I will barricade my door!"

The major was petrified with astonishment. "What *is* the matter," he said, shaking me gently by the shoulder. "What a state of terror you are in. Do you know Madame de Lievitz?"

"No!" I stammered, trying to master my agony, "I have never seen her. Where could I have seen her? I do not want to see her. I am afraid of women, of all women. We become cowards in seeing them, scoundrels in hearing them. They have hooks in their eyes, poison on their lips. He who loves them is lucky if he only loses half his soul . . . "

There was no time for him to answer me. The door opened and Countess Sophie de Lievitz appeared, accompanied by General Mileff and two aides-de-camp. I drew back, slowly, to the further end of my cell, like a rabbit who sees a hyæna entering his run, till I pressed my back against the wall as though I would force it to open and to let me through.

(To be continued.)

Time and Change.

WE concluded our last article with the endeavor to form some faint conception of the physical and climatic changes revealed to us by the story of the glacial and inter-glacial deposits. Let us try to summarise the known facts in the compass of a few paragraphs.

Generally speaking, then, all over the northern hemisphere the sequence of events was as follows: First came the glacial period proper, not one uninterrupted epoch simply, but several periods of arctic cold; all intensely severe, but separated by intervals marked by physical changes, and milder temperatures, during which both marine and freshwater beds accumulated. No one can divine from the intercalated beds of sands and gravels, how many such interglacial periods there were. There must have been several such milder intervals, of various duration and extent, some perhaps being comparatively local, others probably almost general throughout the northern hemisphere. The period of their total continuance must have been immense, judging by the nature of the deposits, marine, estuarine, and fluviatile, involving extensive oscillations of the land surface, as well as by the thickness to which some of them have attained. The vast thicknesses attained by the ice sheet at its maximum, which overtopped all but the highest peaks, and swathed the northern continents in its folds, attest also the intensity and the long duration of the cold. Taken in their entirety these changes are of a stupendous character, staggering to the mind which attempts to conceive them.

When these closed at last, and the land reappeared, the climate became sufficiently temperate to permit of the growth of timber trees, and of the occupation of the British area by large mammals, mammoth, horse, ox, deer. A submergence ensued, to the extent of 500 feet in Scotland, and 1,200 feet in Ireland, turning the British area into a scattered archipelago of islands; this was accompanied by a diminution of temperature, the prelude to the last glacial age. The shells found in the beds of sand and gravel of the period indicate a somewhat colder condition of climate than exists at present. The last glacial age was ushered in by a re-elevation of the land surface over Western Europe. Nowhere, however, either in Europe or America, does the cold seem to have been so intense in this last age, as in the first period when the ice held dominion. But the glaciers of this period were sufficiently extensive to plough out, and to carry before them, many of the early glacial and interglacial deposits; so that over wide areas no trace of these deposits has been left intact. This is the case in Norway, Wales, and Ireland, while in England, Scotland, and North Germany they occur mostly in patches. Hence the reason of that confused intermingling of beds of widely severed ages which we before noted, sand, gravel, sea shells, boulder clay,

brick clay, scratched stones, travelled blocks, mud and salt which occur in intercalation among the till.

With the retreat of these glaciers the reign of ice in these islands and latitudes came to a close, and other conditions of a sub-arctic nature supervened, during which glacial lakes were formed, great floods swept away morainic and interglacial deposits alike; masses of floating ice dropped their erratics, the land rose higher until Britain became continental, terraced sea beaches being formed during the process; and the climate became milder, progressively ameliorating down to the present time. The details of these physical and climatic changes lie without the scope of our subject.

Now, local elevations and depressions of the land surface will not explain the uniformity of the glacial phænomena over the whole of the northern hemisphere, therefore we are forced to the conclusion that the causes of these phænomena must have been of as general a character as the effects themselves are wide spread. And the evidence is remarkable and abundant that the physiography of Western Europe has borne widely different aspects to those which it wears at present. There exists a wonderful, and quite exceptional, series of deposits on the north-east coast of Norfolk, at Cromer—interesting as records of the gradual succession of certain phænomena in that part of England—which beginning with pre-glacial times continued down to the interglacial period. First there comes the "Norwich Crag," containing deposits of an aqueous or estuarine character, with remains of the mastodon and elephant; over that the far famed "forest bed," containing the stumps of the old trees, still standing erect in their ancient soil, and the remains of a fauna, now mostly migrated or extinct—the hippopotamus, mammoth, elephant, horse, deer, rhinoceros, beaver, wolf; in short, the characteristic pleistocene mammalia. Then evidences appear in fresh estuarine deposits overlying the forest bed, of the sinking of the land, and the burying of the forests under a quantity of *débris*, of gravel, sand, and clay. Over this at last appears the boulder clay with its embedded erratic blocks, the unmistakable indications of the presence of glaciers. Then, in patches, come layers of gravel and sand, with marine shells, overlying the clay, marking the invasion of the sea, which also to-day, as in those distant times, encroaches on the East Anglian coasts.

We have already noted that the evidence of the deposits of inter-glacial times points to similar oscillations of the land surface, that evidence consisting of marine shells interspersed amongst the till. But if these indicate submergences of the land, the evidences of buried river courses in Scotland prove that in the pre-glacial age that country stood higher than it does at present. They could only have been excavated if the land stood 300 feet higher than it does now. Such ancient river beds, known as "dykes" in Scotland, are of common occurrence, and even in England are not wanting, a remarkable instance being

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that of the ancient bed of the Humber, which lies buried beneath 100 feet of glacial drift. And the testimony of post-glacial phænomena leads to the knowledge that the period of change had not passed away with the recession of the last ice sheet. In almost every locality around the British coasts trunks of trees and peat mosses have been found buried underneath the sea, and on islands, and in situations round the shores, as well as in the vicinity of Normandy, Brittany, and Holland, where only a stunted vegetation can now subsist. The inference is obvious that the ocean now rolls over the beds where once the forest trees flourished, and—more than this even—that when these forests existed they must have flourished far inland, for the trees to have attained the bulky proportions their stumps bear witness to.

Nor is there anything inherently improbable in the land elevations and subsidences, for a glance at the Map of England, colored to show the depths of the ocean, or at the Admiralty Charts, reveals the significant fact, that the British Islands stand upon and form simply the higher lands of an extensive plateau, over which the present depth of the ocean never exceeds the 100 fathom limit. This plateau or table land extends to the westward of France, Ireland, and Scotland, to the north of the Orkneys and Shetlands; eastward over the whole extent of the North Sea (except a narrow channel down the Scandinavian coast), right away to Denmark and the Netherlands, and southward over the English Channel. But the depth in most parts of this wide area rarely reaches the 100 fathom line, but measures for the most part between 30 and 40 fathoms. The sea between Scotland and the Hebrides, is seldom more than 70 fathoms (420 feet) deep. The German Ocean, between England and the Netherlands, does not average more than 150 feet in depth. Couple these facts together, the shallow seas and the extensive plateau, and the conclusion is obvious, that an elevation of 400 or 500 feet would obliterate the British Islands as such, making them a western promontory of Europe; while, on the other hand, a depression similar in amount would convert the two sister islands into a numerous archipelago studding the waters. And this is what the geological testimony says did actually occur. The buried forests, the sea beaches, the intercalated beds of sand and gravel, the ancient river courses, the Cromer beds, are eloquent witnesses of alternations in the respective levels of land and sea. So that we find, instead of one glacial epoch, a whole series of physical changes, and successions of climatic contrasts, of elevations and subsidences of the land; periods too, so prolonged, that the early glacial conditions passed completely away, forest trees flourished and perished, a large fauna occupied the broad plateau, extensive accumulations were formed, lacustrine, estuarine, fluviatile; these to pass away again and give place once more before the advance of the Arctic climate.

But when we find that evidence of similar phænomena exists all over the northern latitudes, we are convinced that some other agency besides that of oscillations of the land surface, must have

been in operation to produce results so universal in character; and Labrador, Canada, British Columbia, and the States, as far south as New York, evidence in their rocky records and in their lake basins, ancient glaciation. Between the St. Lawrence and Hudson's Bay, Professor Dana estimates the thickness of the old ice sheet to have measured 12,000 feet or more. The hills of the Swiss Alpine districts show evidence of the former existence of glacial action on a much larger scale than exists at present. The characteristic ice-markings are visible on the valley sides, high above the surface of the present glaciers. Erratics are very numerous on the southern slopes of the Jura mountains. Blocks of enormous sizes have been borne from the Alps across intervening valleys, to resting places far distant from their homes. In Norway the glaciers are mere pigmies, compared with their predecessors of ancient times. The glens of the Pyrenees contain huge erratics and moraines. The cedars of Lebanon grow on old moraines, and right away to China the phænomena we have passed under review testify to the prevalence of glacial conditions coextensive with the whole area of the northern hemisphere.

Now of all the theories which have been proposed to account for these oscillations of climate, the only one which has obtained general assent among geologists is that suggested by the late Dr. Croll, and elaborated by him in the *Phil. Mag.* for August, 1864, and in "Climate and Time," chapter iv. Briefly summed up, it is this :—In midwinter the earth is in perihelion, or in that part of her orbit where she approaches nearest to the sun; that is, paradoxical though it may appear—she is three millions of miles nearer to the sun in December than she is in June. But the amount of eccentricity is never constant. Year by year it slowly varies, in its range between maximum and minimum. At these extremes the total variation in the earth's distance from the sun is about thirteen and a-half millions of miles, that is to say, the difference between half a million at the minimum, to fourteen millions at the maximum periods of eccentricity. This eccentricity, caused chiefly by the disturbing influence of the planets Jupiter and Saturn, would scarcely have the effect required to constitute a glacial age, even of slight severity, but coupled with the precession of the equinoxes it is not difficult to see how a very sensible effect upon climate might be produced. The precession of the equinoxes causes the solstitial points to travel along the elliptic in a direction contrary to that of the earth's annual revolution, so that each successive year the solstices come to us about twenty minutes earlier than they did the previous. Disturbing planetary influences prevent this from being a constant factor, but eventually a great cycle of 10,500 years is completed, when the seasons are completely changed, midwinter occurring in June and midsummer in December. So that were the winters of the northern hemisphere to occur when the earth is in aphelion instead of, as at present, in perihelion, and also to occur at a time when the eccentricity of

the earth was greatest in its orbit, a very much smaller amount of heat would be received by that hemisphere (possibly a fifth less) than at present. Assuming also the conditions exactly reversed, summer in perihelion at the time of least eccentricity, a much warmer climate would prevail. Further, the effects of the intense cold caused by winter in aphelion would in time become aggravated, for owing to the low specific heat of ice and snow, the heat of the summers would exercise comparatively little effect, and the ice would go on accumulating until a true glacial age would supervene, and, as in Scotland, swathe the valleys and mountains in one sheet of ice. Other subsidiary causes would come into play to intensify the agencies at work, but this, in brief, is the broad outline of Dr. Croll's theory. Upon it, calculations of the probable date of the last, and other glacial epochs, have been based. One hardly likes to deal with figures in geology, and when the date of the last glacial period is given as having begun about 240,000 years ago, and ended 80,000 years since; and when, also, we possess almost unequivocal evidence that man lived in Britain in inter-glacial ages, we stand astounded before the vistas of Time, and feel almost painfully our own dwarfish insignificance. We open our eyes for a moment on the infinities around us, then close them for evermore!

A thought arises in our minds—will another glacial period ever supersede our present mild climate? Why not? Argument and analogy favor the probability. Geologists trace in the older formations of the earth's crust evidences of recurring glacial conditions. We have long since abandoned the antiquated idea of the stability of the earth. Configuration and climate vacillate and change as the time cycles roll onward. Our climate has gradually and steadily ameliorated since the close of the last glacial period. We know that climatic conditions sufficiently genial to permit of the tropical fauna occupying Britain, marked the inter-glacial periods. What more reasonable, then, than the inference that the climate will yet again grow arctic in character, and that glaciers will scour away and almost utterly efface all the triumphs of our proud civilisation in these islands? The idea that we are living in an inter-glacial epoch seems strange and startling, but so far from bearing the stamp of improbability, it is, reasoning from the data of the past, as certain to come about as the rising of the morrow's sun. These, and other changes yet more vast and sweeping, will visit our planet, ere that far off time arrives when she shall become cold, and dead, and waterless like the moon, the sepulchre at last of all that countless offspring to whom she has imparted the breath of life. J. HORNER.

Insects and Flowers.

I.

In this article and its successors, those relations between insects and flowers that are established as the results of scientific observation, will be narrated in popular form. Nothing is required of the reader in the way of previous knowledge of entomology or of botany. A love of knowing and a little patience are the sole requisites for the student.

Insects and flowers are related in more ways than one. The flowers are of use to the insects in that they yield them food, and material, in certain cases, for house-building. The insects are of use to the flowers in the fertilising of the flower-seeds that are to grow up into future generations of plants. But to some special plants, the insects that visit them are of value as food. There are carnivorous plants as well as carnivorous animals.

This threefold relationship will be only comprehensible in all its details to those who have mastered the parts of an ordinary plant. Interesting as are the anatomy and physiology, or the study of structure and study of function of insects, a knowledge of these is not essential to the understanding of what is to follow, though such a knowledge will be helpful.

Hence, I shall begin with a brief account of the parts of a plant, that will be best followed by the reader who will turn from the books and pictures of men to the book of Nature—who will, in a word, pull to pieces one or two plants as he reads my description.

Every flowering plant consists of three parts—root, stem, leaf. For the flower itself is only a collection of metamorphosed leaves. Roots and stems and ordinary leaves are so familiar to us all that the mention of them would be enough, were it not necessary to tell the reader of the parts of a leaf. These also are three. A wonderful number that three, always recurring in Nature, and thus giving rise to strange speculative doctrines. We shall understand the three parts of a leaf if we look at the leaf of a Mallow or of that of a Rose.

Both the leaf of the Mallow and of the Rose have a stalk. This is called the *petiole*. Upon the petiole of the Mallow-leaf is borne a single green expansion, upon that of the Rose are many. The one of the Mallow and the many of the Rose, alike constitute the *lamina* (a plate), or blade of the leaf. The lamina is simple in the one case, compound in the other. In the leaves of both plants are found at the base of the petiole, or leaf-stalk, two small structures of a lighter green hue than the blade. These are the *stipules*. In the Mallow, they are free from the petiole except just at their bases. In the Rose, they are attached to the petiole throughout the greater part of their length.

Root, stem, leaves. The flower only remains for consideration.

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I have said that this is a collection of metamorphosed leaves. Every part of the flower is but a modified leaf. This is shown by several facts. The development of each part of the flower follows the general plan of development of a leaf. The structure of each part is in the main that of a leaf. There is every transition between the leaf and the outer members of the flower, between these again and certain of the inner members. A flower is often replaced in certain plants by a leaf-bud.

Let us consider the parts of a flower. Here again, the observation of an actual specimen will be of more value than the reading of many words. The best plant for the beginner is, without doubt, the buttercup. I shall describe its parts first. But as in January the buttercup is not "out," I shall also mention the parts met with in the Hyacinth, a plant obtainable even in the winter months.

The most casual glance at a buttercup reveals four sets of organs. From without inwards they are green leaves, yellow leaves, yellow threads, green-yellow nutlike bodies. The green leaves are the *sepals* and they, as a whole, form the *calyx* or cup. The yellow leaves are the *petals*, and they, as a whole, form the *corolla*. The yellow threads are the *stamens*, and they, as a whole, form the *andrœcium* (ανηρ, gen. ανδρος = a man ; οἰκος = a house). These are the male organs. The green yellow nutlike bodies, most internal, are *carpels*, and they, as a whole, form the *gynœcium*, (γυνη = woman ; οἰκος = house). These are the female organs.

Of the first two sets of organs little need be said. The greenness of the sepals reminds us of the fact that they, and all the other parts of the flower, are but leaves modified, while the similarity in structure that obtains between the sepals and petals, reminds us of those transitions from organ to organ in the flower that confirm the view as to the nature of the parts. Functionally, the sepals and petals are mainly of use as protective organs to the more important parts within. The brightness of the petals also attracts insects.

The petals are attractive to insects in another way than by their bright color. If one of them is carefully removed from the flower and examined, on its inner face at the base will be found a small scale. Behind this is honey. Every organ in which honey is formed in the flower is called a nectary. Nectar was the drink of the Gods in the days when ambrosia was their food.

The stamens call for an examination rather more detailed. Each thread-like stamen is especially thread-like in its lower part. At the top it widens out. The narrower, lower part, is the *filament* (filum = a thread.) The cap on the top of the filament is the *anther*. If the anther is examined with aid of a magnifying glass, it is seen to consist of two *lobes* separated by an extension of the filament. Each lobe has a vertical line running down one face. Along this line the anther lobe opens when the Buttercup is about to help in forming seed, and when the lobe is

thus open, its contents are discharged. The contents consist of a yellow dust, the *pollen*. This dust is necessary for the ripening of the seed. Unless it reach the seed, no future Buttercup will be formed by the latter.

The carpels are the last part of the flower. Each of them is in this plant a nearly flat, nearly oval body, with a small point at the free end. The small point is the *stigma* (στιγμα = point.) All the rest of the carpel is the *seed-case* or *ovary* (ovum = an egg.) If one of the many carpels of the Buttercup is split open by a careful cutting through its edge, a single seed is found within.

These four parts, sepals, petals, stamens, carpels, make up ordinary flowers. They may be much modified, as compared with those in the Buttercup, as to structure and arrangement. Thus, in the Hyacinth flower we find the calyx and corolla both alike, and in fact, forming one set of six white leaves, the perianth (περι = around ; ανθος = the flower.) Within these leaves and upon the inner face of them are six stamens. But the most remarkable transformation has been undergone by the female parts of the flower. The gynœcium of the Buttercup was a number of separate carpels crowded together on a conical eminence in the centre of the flower. The gynœcium of the Hyacinth is a flask-shaped body standing alone in the centre of the flower, surrounded by the white-leaved perianth. The top of this flask-shaped gynœcium is the stigma. Its enlarged base is the ovary, and the little stalk that runs from the summit of the ovary to the stigma is the *style*. This style, though absent in the Buttercup, is, on the whole, far more frequently present than absent in flowering plants.

If with a sharp knife a clean cut is made horizontally across the widest part of the ovary of the Hyacinth, the section thus obtained shows three radiating lines, and in each of the three spaces, closed by these lines, a double row of seeds. Each space is a cell, or *loculus* of the ovary—not to be confounded with the microscopic cells of which all parts of all plants are primarily composed. Each of the three radiating lines is a partition-wall between two adjacent loculi. The seeds are attached in the angle between two partitions, and the point of attachment is the *placenta*. As all this is seen in a transverse section, we learn that the gynœcium in this plant is made up of three carpels joined together, and that each of the carpels has within it several seeds. And this arrangement by which a solid gynœcium is built up out of two or more united carpels, is much more usual in flowering plants than the arrangement seen in the Buttercup, where the carpels are separate one from the other.

The production of a new plant depends upon the fertilisation of seed by pollen. When pollen is discharged from within the lobes of an anther of some flower, it has to reach the unripe seed of a flower of the same kind, but not necessarily or usually on the same plant, if any result in the way of fertilisation is to take place. Without here inquiring too curiously into the way in which the

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transference is affected, let us suppose it as affected, and that the pollen of, say, a Grass or a Rose, has been carried to the stigma of another Grass or Rose of the same species as the flower whence the pollen came. The stigma has a hole in it that leads into a canal running the length of the style, and leading down into the ovary.

When the pollen grain has fallen upon the stigma under favorable conditions, that grain begins to grow. It grows down the canal of the style into the ovary, and then coming into relation with one of the unripe seeds, fertilises the seed.

With all these latter stages the insects have nothing to do. They are only concerned in the important question of transit. Bearing in mind the fact that when once the pollen grains have reached the stigma, under favorable conditions, the succession of events is practically the same in all plants—viz., growth of the grain, its extension down the canal of the style into the cavity of the ovary, its impregnation of one of the unripe seeds in the ovary—let us turn our attention to the means by which the transference of pollen from the anther in which it was contained, to the stigma of the gynœcium within which lies the seed to be ripened, is effected. This transference may be brought about in one of two ways: either by the wind or by insects. Some plants depend for the carrying away of their pollen upon the wind. The grass, taken as an illustration in a preceding paragraph is thus dependent. It will be noticed that the grass is a plant very humble in habit. Its flowers are so inconspicuous that many people are not aware that it has any flowers at all. They are, however, present in most grasses, though you will not find them on your lawns, where only the leaves grow. Grass-flowers have no bright colors, no sweet odors. They contain no nectar. On all these grounds they are not attractive to insects.

But further, they have large supplies of pollen. Each of the anthers of the three stamens generally present in a grass-flower is very rich in pollen. The stigmas, usually two in number in each flower, are fringed. And these two facts are related to the fact that the grass is what the botanists call "wind-fertilized." For the greater the quantity of pollen, the better chance is there that the wind, when it blows, may catch up some of the grains and carry them away from the flower in which they are produced. And the fringed nature of the stigma renders the probability of the retention of some of these drifting pollen-grains the greater.

From this single plant, the grass, we are led to the consideration of other plants that, like it, are dependent upon the wind for fertilisation. And we find that in all of them the flowers are colorless, odorless, honeyless, that the pollen is in large quantities and the stigma rough or fringed or in some way favorably constructed for the catching and the retention of the pollen. Examples of these "wind-fertilised" plants are the alder, the hop, the plaintain, the hazel, the oak, and the technical name given to them is that of "anemophilous plants"—ανεμος (anemos) = wind, φιλω (philo) = I love.

One point to be noticed is that not all the pollen which is carried by the wind from a flower necessarily reaches the stigma of a flower where it can do good work by fertilising the unripe seed within the ovary beneath. Some of it must be wasted. Much of it is likely to be wasted, and all of it may be. "The wind bloweth where it listeth," and in consequence much of the pollen will be liable to be scattered anywhere but upon the stigma fitted for its reception. I use this last phrase because pollen may be carried to stigmas of plants where it will be useless.

And lastly, let us note especially, that in this wind arrangement any fertilisation that may occur must almost inevitably be of the unripe seeds of one plant by the pollen of another plant of the same kind. The wind will carry the pollen-grains afar and they will be laid upon the stigma of some flower other than that whence the grains themselves were borne. And thus cross-fertilisation, and not self-fertilisation, is effected through the agency of the wind.

E. B. AVELING, D.SC.

(To be continued.)

The Myth of the Resurrection.

"THE central miracle of Christianity is the resurrection of Jesus Christ from the dead." In these, or in similar words, Christian preachers in every century have re-echoed the words of Paul: "If Christ be not raised, your faith is vain," The miracle is a stupendous one—the raising to life of a man dead for about thirty-six hours. "Death" is the word which represents the sum of the changes in the tissues of the body which follow on the cessation of respiration and of circulation. Every muscle, during that thirty-six hours, would have changed in condition, optically, chemically, electrically, etc. Every nerve would have changed, in similar fashion. In short, every part of the body would have passed through the earlier of that series of retrograde changes through which the organic passes back into the inorganic. These changes are not, in their beginnings, visible to the naked eye, and therefore to an ignorant age they are non-existent. "To raise from the dead," before absolute and visible putrefaction had begun, seemed so easy a thing ere the microscope, the reagent, the galvanometer, had revealed the important changes which precede visible decomposition: "Thou shalt not suffer thy Holy One to see corruption," sang the Psalmist. "He, whom God raised again, saw no corruption," declared Paul. It would be unfair to demand from the half-barbarian Hebrew prophet, or from the scientifically ignorant Paul, a physiological knowledge unattainable in the ages in which they lived. They could not tell that it would be quite as easy to roll back the waves of or-

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ganic change after corruption had appeared, as after coagulation of the muscles had supervened. There are no stages in the miraculous; no ordinary experience can measure the supernatural.

It is claimed, then, on the part of the Christian apologist, that this extraordinary resuscitation of a man, dead for thirty-six hours, really occurred about the year 33 A.D. That the resurrection of Jesus of Nazareth, called by his followers the Christ, is not a myth, nor a parable, nor an allegory, but an actual historical event.

It is a sound rule of criticism that the more unusual an event, the stronger should be the evidence supporting it. A statement which contradicts the whole mass of human ordinary observation and experience must, if it is to be believed, be supported by indubitable testimony. If anyone tells us: "The sun rose this morning," we do not challenge an assertion for which we are prepared by the antecedent universal testimony of the human race to the daily orderly rising of the sun. If anyone tells us: "In India there are serpents with legs," we should require reiterated corroboration from trustworthy naturalists, because the assertion is contrary to the hitherto observed facts respecting serpents. If anyone tells us: "The cow jumped over the moon," we decline to believe the statement, because the muscles of no cow known to man have elasticity sufficient for the performance of such a leap, because the lungs of the cow are not adapted for breathing outside the terrestrial atmosphere, and generally, because no previous bovine performance has prepared us for a manifestation of such enormous acrobatic agility. We conclude that the speaker is either impudently endeavoring to deceive us, or that he is himself deceived; the latter explanation would be accepted, if we have had reason to believe that he was an honest, although mistaken man; in either case, his assertion would be met with "the blankest scepticism." In face of the miraculous, Hume's argument always stands good: That it is far more likely that individuals have been deceived, than that an event has occurred which contradicts humau experience. We are constantly meeting in the world both charlatans and simpletons; either, or both, may start the story of a miracle, and then it passes from mouth to mouth, growing as it travels, and believed by a superstitious and ignorant people, it gradually attains the rank of history, and sometimes becomes the foundation of a religion. Thus has the myth of the resurrection of Christ become the "central miracle of Christianity."

As this myth is so widely believed, and as it is asserted to rest on incontrovertible evidence, it is wcrth while to examine the evidence. I allege that the evidence offered is so confused and contradictory that it would not suffice to establish an ordinary occurrence, let alone a miracle, and that even admitting the gospels as written by the persons whose names they bear—an utterly unwarrantable admission—the evidence given in them is wholly

unsatisfactory, in fact, it is so unsatisfactory that it is not worth while to examine into the authenticity of the gospels, so far as the myth of the resurrection is concerned.

The first remarkable fact connected with the "witnesses" of the resurrection, is that no one comes forward and says: "I saw the resurrection." *There is no direct testimony.* None who saw that dead man issue living from the sepulchre has told the world: "My eyes saw this great sight." No message has come down to us from those who watched by that sealed stone, that the "Son of man," with pierced hands and feet came forth alive from the tomb in which he had been laid for dead. When we come to the direct evidence of those who saw Jesus after his supposed death, we find it very weak; in Matthew we read: "Then the eleven disciples went away into Galilee, into a mountain where Jesus had appointed them. And when they saw him they worshipped him; but some doubted." Of these eleven, Matthew was one, and the only testimony that this Matthew—the supposed writer of the gospel—gives, is that "they worshipped him, but *some doubted.*" Was Matthew, the supposed writer, among the worshippers, or among the doubters? How is that Matthew, one of the eleven, writing of the "central miracle" of the Christian faith, does not indignantly protest against the doubters, and affirm his own undoubting faith? "Some doubted." The doubt has floated down the centuries, and if some of his own apostles, his closest friends, doubted when "the risen Christ" stood face to face with them, are we to be blamed if, eighteen centuries afterwards, we decline to believe without proof that which they believed not when the alleged proof was under their very eyes?

Mark and Luke do not pretend to be eyewitnesses, so their testimony is admittedly hearsay. We come to John, "the beloved disciple." Here—by making the unwarrantable assumption that this John was the author of the fourth Gospel—we should arrive at the solitary unsupported testimony of an ignorant man, that he saw Jesus after his supposed death. We can scarcely believe so stupendous a miracle on the uncorroborated testimony of a single unknown fisherman, belonging to a grossly ignorant and superstitious race. Surely never did a miracle hang on a less trustworthy link. And when we remember that it is generally admitted that the fourth Gospel is of Alexandrian origin, and is confessedly at variance, on a large number of important points, with the three synoptics, we are the better able to appreciate the utter worthlessness of the "evidence" of "the apostle John."

Passing, however, over the deficiency of evidence at first hand, let us examine the hearsay evidence, on which we are driven to rely, *faute de mieux.* Is this, at least, consistent and coherent throughout, so as to leave on the mind an impression of careful accuracy and painstaking on the part of the writers?

How many accounts have we, leaving out mere references to it

scattered through the books of the New Testament? (The value of the "general Christian belief" in it will be dealt with later.) We may take six; those in the four gospels, the account of the actions of Jesus after the resurrection, given in Acts i., and the brief summary in 1 Cor. xv. If these six accounts supported each other, they might be of some value, secondhand as they are, but being utterly incompatible the one with the other, they become utterly worthless as evidence. Only those who are determined to believe with or without proof, can accept the resurrection myth on the contradictory and incoherent testimony of our six witnesses. I shall analyse this testimony next month. SCEPTIC.

(To be concluded.)

In Prison for Blasphemy.

THE readers of "Our Corner" are doubtless aware of most of the incidents in connexion with the prosecution of the *Freethinker* up to the time of the trial at the Old Bailey. I shall therefore begin my story at the time when I disappeared from among my friends. Immediately my sentence was pronounced I was seized by a warder and hurried down the stairs to the dungeons below the court. These are unprovided with windows, the only light which ever reaches them is a stray gleam or two from a solitary gas jet in the adjoining corridor struggling through a thick wooden grating in the door; there I found Mr. Foote, and presently we were joined by Mr. Kemp. We could hear the roar of the crowd in the Old Bailey, and the sound was very sweet in our ears.

In a short time a warder came and conducted us back to our cells where we had been since Thursday. These are in a comparatively modern building, but to reach them we were conducted along some winding arched stone passages with every few yards a heavy door studded with thick nails and provided with large bolts and chains, which the warder rattled and clanked as we went through as if he loved the sound of them. We found our tea awaiting us, and this was the last civilised meal I partook of for some time. The next morning, at eight o'clock, a small wicket in my cell door was opened, and a voice called out to me to put out my "tin"; this was a shallow pannikin which would hold about a quart. I looked through and saw a warder with a wooden bucket hanging on his left arm, and a ladle in his right hand; the bucket contained something which looked like bill-stickers' paste. He emptied a ladleful into my can and told me that was for my breakfast. I did not like the look of it, so breakfasted off a piece of dry bread and a drink of water.

About ten I was brought out of my cell, put with my companions in the prison van, and taken to Holloway prison. The

van is like a large omnibus, divided inside into compartments, so small that I found myself wedged very tightly and uncomfortably. Several of the previous occupants had written their names and sentences on the panels; one had put in large capitals: "Ratty from Plaistow, 12 Moon, out July, 1883." Arrived at Holloway prison we were placed in a row in the entrance hall, and presently the Governor came to us; he enquired our names and sentences, and compared them with a document. Then Mr. Foote and myself asked permission to send a petition to the Home Secretary asking for a remission of sentence. This was granted, and we were then handed over to a warder, who conducted us to the "F," or reception, wing and placed us in separate cells, and there I saw, for the first time, the celebrated plank bed. It is simply a board six feet long, two feet three inches in width, with a raised portion at the head to serve for a pillow, and having two blocks on the under side which lift it about three inches from the floor. The regulation is, that every prisoner must sleep on the bare wood every night during the first month, two nights a week during the second month, and one night a week during the third month, having a mattress on other nights. After the third month he has a mattress every night. At noon an officer brought my "dinner;" it consisted of three quarters of a pint of pea soup, six ounces of potatoes, and six ounces of bread; the bread and soup were fairly good, but the potatoes were very inferior; they were very small, had dark green patches on them when skinned, and had such a strong, earthy taste, that I could not eat them. The soup was in a pannikin with no handle, which would hold about three pints; another smaller pannikin fitting in the top of the first, contained my potatoes and bread. The only instrument provided to eat the food with is a thick wooden spoon, and skinning potatoes with this is an art not at all easy to acquire. The cans are washed once a day, but have, except when quite new, a rusty, grimy appearance inside, which is not appetising if one is at all fastidious. A dietary scale, hanging on the wall, informed me that my breakfast each day would be one pint of gruel and six ounces of bread, supper the same; for dinner each day I should have six ounces of potatoes and six ounces of bread, and in addition, on Tuesday, Thursday, and Saturday, three-quarters of a pint of pea soup; on Sunday and Wednesday, six ounces of suet pudding; and on Monday and Friday three ounces of meat. A foot-note stated that the authorities might, if they chose, substitute for the meat on Mondays, seven ounces of beans and *three-quarters of an ounce* of bacon fat, and that substitution is always made, so that in fact prisoners have three ounces of meat and three-quarters of an ounce of bacon fat in each week. There are other substitutions which may be made, such as fish for meat, onions, cabbage, leeks or rice, for potatoes; but excepting giving us rice instead of potatoes on Thursdays, none of these have been made within the memory of the oldest inhabitant. The meat is Australian tinned meat, and is served just as it is turned out, not prepared in any

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way. Another foot-note said that all meats were to be weighed without bone. I noticed, however, that a piece of rind was always weighed with the bacon fat, but as the prisoners always ate rind and all, perhaps that made no difference.

About three in the afternoon I was taken with my companions to the dressing room. I was put into a compartment containing a bath, a net was given me to put my own clothes in, and the prison clothes were brought me ; I found these too small in the waist by some inches, so asked the warder for others, "Oh," said he cheerfully, "they will soon fit ; you'll soon shrink down to the proper size." So I made shift the best way I could. Then I went before the doctor, who after examining me, ordered me a mattress to sleep on, as he did not think I should be able to sleep without one. I was of the same opinion, and was very thankful for the concession. My friends were ordered the same, and then we went back to our cells. Later on came the schoolmaster, and Mr. Foote and myself were taken into the schoolroom to write our petitions, then back again to our cells. At six o'clock my supper was brought. After supper I walked round my cell a few hundreds of times, and then unrolled my bedclothes—two sheets two blankets, and a coverlid—and made my first trial at bed-making. It was a decided failure ; I woke up in the night shivering with cold, and found the bedclothes on the floor, so I had to get them on me again in the dark the best way I could. The next morning we had to attend chapel after breakfast ; the service was reading the Litany, that dreariest and most stupid of all compositions ; and singing a hymn. It was all over in half-an-hour. About eleven o'clock a warder came and told me to take up my bed and follow him, for that he was going to take me to my permanent home during my prison life. I found my friends in the corridor, each with his mattress on his shoulder ; we followed the warder across a yard, then up a spiral staircase, and found ourselves in the main body of the prison. It is built on the radiating principle, the "wings" running out from a common centre, something like a starfish ; the wings are lettered A. B. C. D. ; there are four floors. We were all located on the second floor, but in different wings, Mr. Foote was put in A. 2, 1, Mr. Kemp in C. 2, 60, I was in B. 2, 2, which means that I was in B. wing, second floor, No. 2 cell. The warder in charge of B. wing ushered me into my cell ; I turned for one last look at my companions, who were being taken in other directions, the iron door closed on me with a crash, the key rattled in the lock, and I began my regular prison life. W. J. RAMSEY.

(To be continued.)

Parables Rewritten.

MATT. XII., XIII.

AND he spake unto the multitude many things in parables, saying: The kingdom of heaven is like unto certain seed which a man went forth to sow. And as he sowed some fell by the wayside, and straightway thistles and nettles sprang forth, tormenting the feet of the weary wayfarer, and driving him from the path of progress into a wilderness beset with fiends and dragons. And some fell upon rocky places, and the birds of the air incautiously devoured it, and straightway were poisoned thereby. And others fell among thorns, and grew up and choked those thorns with greater thorns and more cruel brambles. And others fell upon good ground, and sprang up like monstrous toadstools in the darkness of the night, and brought forth evil fruit of hatred and strife and persecution, some a hundredfold, some sixty, some thirty. But when the sun ariseth they wither away in the uncongenial light and warmth, because they have no depth of root in human nature and in the truth of things.

And the disciples came and said unto him: Why speakest thou with them in parables? And he answered and said unto them: Unto us it is given to know the mysteries of the kingdom of heaven, but to them it is not given, neither is it meet that they should understand, lest they should loathe the tidings that we bring, and haply tear us in pieces. Therefore speak I to them in parables, that seeing they may see not, and hearing they may hear not, neither understand, as the prophet hath foretold.

Another parable set he before them, saying: The kingdom of heaven is like unto a man that sowed upas seed in his field. And while his servants prayed and fasted his enemy, Nature, came and sowed other seeds among them. But when the upas seeds sprang up and brought forth noxious fruit, then appeared wheat and blossoms also. And the servants of the householder said unto him: Sir, didst thou not sow religious seed in thy field? Whence, then, hath it golden corn and laughing flowers? And he said unto them: An enemy hath done this. And the servants said unto him: Wilt thou, then, that we go and gather them up? But he said: Nay; lest while ye uproot the flowers ye also kill the poison-plants with which they are entwined. Let both grow together until the harvest, and in the time of harvest I will say unto the reapers: Gather up first the wheat and the flowers, and cast them into unquenchable fire; but gather the poison-berries into my barn.

Again, the kingdom of heaven is like unto a net that was cast into the sea, and gathered up every kind, which, when it was filled, they drew up on the beach, and they sat down, and gathered the good into vessels to be boiled and roasted alive, and to be devoured; but the bad they cast back into the sea to enjoy life and liberty again. So shall it be in the end of the world; the angels shall come forth, and sever the Garibaldis and the Darwins from among the pious, and shall cast them into the furnace of fire. But the pious Jacobs and the Torquemadas, beloved of God, shall go into life everlasting.

And, again, the kingdom of heaven is like unto a man that is a merchant seeking goodly pearls, and having found one pearl of great price, he went and sold all that he had, and bought it, and found, too late, that it was but a counterfeit; insomuch that when he tried to sell it, they cast him into prison and scourged him with many stripes, as one that would defraud his fellows.

And, again, the kingdom of heaven is like unto a treasure carried forth

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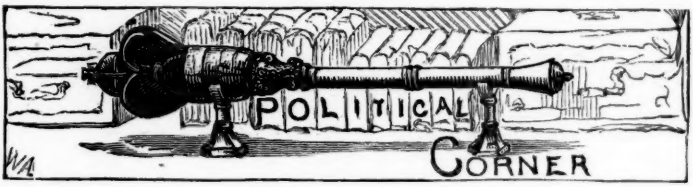
from a plague-stricken city, and hid in the field; and a certain man found it, and went home with great joy in his heart and the black plague in his system, whereof next day he died.

And, again, the kingdom of heaven is like unto the leaven of typhus, which a thoughtless woman took and hid in three measures of milk, till all was leavened.

All these things spake he in parables unto the multitude, bringing forth out of his treasure things new and old. W. P. Ball.



THE insane Tory opposition to the Ilbert Bill has encouraged the English residents in Calcutta—who are actually already, and have been for eleven years, subject to the whole provisions of the Bill—to join in a very open hostile demonstration against Lord Ripon. Do the few foolish people who are now seeking to wantonly insult and provoke the whole of the most educated amongst the population of Hindustan ever think that it is possible that they may raise a very whirlwind of discontent and disaffection?

THE disasters to the Egyptian forces in the Soudan, crushing as they seem to have been, ought not to concern this country any more than did like disasters in the same district to the late Viceroy ten years ago. Unfortunately, we have so meddled and muddled in Egypt since the close of 1875, that nearly every contingency is pregnant with mischief. If it were possible to feel sure that Mr. Herbert Gladstone's repudiation of responsibility for the Soudan expedition represented also his father's intentions, for the future Englishmen might strive to repose confidence in the Ministry. I pointed out, nearly two years ago, the grave menace from Soudan, and fear now that fortification of frontier and indefinite occupation may be made the cover for schemes of annexation. Unfortunately, we should be supported by the French Government in stealing Egypt, because French capital would rather be saved from risk by English bayonets than be utterly lost, and French financiers have heavy interests at stake. Even the *Times* now recognises that which I have repeatedly asserted, *i.e.*, the absolute insolvency of the Egyptian Government, and declares that all the interest must be reduced; but what then of the supposed value of the Suez Canal shares, of which, the coupons being detached, the interest on the £4,000,000 is paid by the Government?

THE questions between France and China seem still further complicated by the revolution in Annam, and instead of annexing further territory in Tonquin, France may be compelled to regard with anxiety her colony in Cochin-China. Though there is no actual declaration of war yet between France and China, many acts have happened, any one of which either side may treat as a *casus belli*, and conflict may even have already occurred between the regular troops. Trade is said to be very dull in Paris, and many workmen lack employment; but an open-air meeting of unemployed artizans, called by the anarchist party, met with no favorable response, and was, indeed, promptly repudiated by all the leading Radicals.

THE remarkable conference of delegates from the various British colonies in the southern hemisphere, recently held in Sydney, is probably the first step to a Federated Australian Government, either completely Republican in its form, or so slightly bound to the British Monarchy that the hold to be at all lasting must be scarcely felt. It is much to be regretted that the Government are apparently about to resume Crown control in Basutoland.

IN Spain the revolutionary movement is once more raising its head. The Republican manifesto just published by Signor Ruis Zorilla is the small outward visible sign to the world of the great political earthquake in Spain, of which the partial military outbreak of a few months ago was but a forerunner. A phrase just used by Signor Sagasta, the late Prime Minister, and a man of considerable power, shows how ideas march even within the limits of most Catholic Spain. "The monarchy is impossible without liberty."

THE Tories at Ipswich did their best with the cry of Atheism and anti-Bradlaughism to return Sir W. Charley. As a result the Common Serjeant of the City of London, who has been more than usually coarse and abusive of myself, polled less by 326 votes than did the late Conservative member Mr. Cobbold. It is true Mr. Cobbold was a gentleman, and his would-be successor is Sir W. Charley. The Conservatives have therefore lost a seat.

PARLIAMENT opens on February 5th. On February 5th it will be my right and duty to present myself again to claim for Northampton the voice and vote which belongs to it by law. What will then happen? Will the new Speaker have to deal with me? For measures the Government are pledged to introduce: (1.) A Reform Bill, in which the suffrage is to be equalised in counties and in boroughs, and which it is hoped by all true Radicals the Government will insist shall be equal for the whole kingdom. (2.) A Municipal Reform Bill for London, and (3) a Bill for County Government. These will possibly be presented much in the order here given. CHARLES BRADLAUGH.

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AT a meeting of the Royal Society on December 6th, Professor Owen read a paper on a "human skeleton from a pleistocene bed, Tilbury, Essex." This figure, almost complete, was discovered during the excavations going on at Tilbury Fort, and was brought up from a depth of nearly 32 feet. The bones appear to have belonged to an old man, of great muscular strength, and they consist of those of the skull—unfortunately fractured by the digging—the pelvis—also fractured—the femurs, the shafts of the tibia, and three teeth. The forehead was low and narrow, the frontal ridges very prominent, thus resembling the famous Neanderthal skull.

THOSE of my readers who are interested in comets will like to know that Professor Pigorini, of the Observatory at Parma, says the comet discovered on the 1st September is now visible at night in the north-west near Gamma in the constellation of the Dragon. It looks like a faint nebula, nearly round, having a nucleus, and also the rudiments of a tail. From calculations which have been made, it is recognised as the comet discovered by Pons in 1812, which is now returning after having been 600,000,000 miles distant from the sun, in May, 1848. Its shortest distance from the sun will be reached on the 25th January, and from the earth (63,000,000 miles) on the 8th January, 1884. It will be most luminous on the 11th of that month. It will then be 145 times more brilliant than on the day of its discovery.

THE death of Sir William Siemens at only sixty years of age is a sore blow to science. He died from a cardiac rupture, caused by a fall.

THE extraordinary sunsets of last November and December seem to have been generally observed, all over the globe. No satisfactory scientific explanation has as yet been given of them. Why does not Professor Tyndall set to work upon the problem, and try to produce similar results artificially as he produced the clear deep blue of the cloudless sky?

PROFESSOR Owen has resigned the post he has held so long, as Superintendent of the Natural History Department of the British Museum. All who have come in contact with him will

regret that his advanced age and feeble health have compelled this resignation. I met him once, some ten or eleven years ago, in his room at the Museum, and have always retained a pleasant memory of the gentle old man in his study.

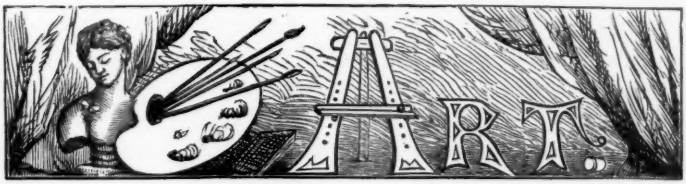
THE scientific event of December was the reading of an essay on "Instinct," by the late Charles Darwin, at a meeting of the Fellows of the Linnæan Society. It was a paper written before the publication of the "Origin of Species," and was, consequently, as Professor Huxley pointed out, an "immature performance." In fact, it contained much that now requires modification in the light of fuller knowledge. Still all that has come from the hand of the great master is valuable, and I therefore make no apology for inserting here a report of the paper, taken from the *Standard*.

"The paper, which treated of the Instincts of Animals, and the bearing of the subject on the theory associated with the famous Naturalist's name, discussed the migration of birds and mammals, and after narrating a great series of curious facts, concluded with the inference that though there were many aspects of the question which admitted of no immediate explanation, the migratory instinct was inherited from ancestors who had to compass for the sake of food or other causes long distances when the conditions of land and water were different from what they are at present. He then considered how the more remarkable migrations could possibly have originated. Take the case of a bird being driven each year, by cold or want of food, slowly to travel northward, as is the case with some birds; and in time we may well believe that this compulsory travelling would become instinctive, as with the sheep in Spain. Now, during the long course of ages, let valleys become converted into estuaries, and then into wider and wider arms of the sea; and still he could well believe that the impulse which leads the pinioned goose to scramble northward would lead our bird over the trackless waters; and that, by the aid of the unknown power by which many animals (and savage men) can retain a true course, it would safely cross the sea now covering the submerged path of its ancient land journey. Animals on oceanic islands and other localities where they have never met with man or beasts of prey are devoid of fear. This instinctive dread they subsequently acquire, for their own preservation, and transmit it to their descendants. At the Galapagos Islands Mr. Darwin pushed a hawk off a tree with the muzzle of his gun, and the little bird drank water out of a vessel which he held in his hand. But this tameness is not general, but special towards man; for at the Falklands the geese build on the outlying islands on account of the foxes. These wolf-like foxes were here as fearless of man as were the birds, and the sailors in Byron's voyage, mistaking their curiosity for fierceness, ran into the water to avoid them. In all old civilised countries the wariness and fear of even young foxes and wolves are well known. At the Galapagos Islands the great land lizards *(Amblyrhynchus)* were extremely tame, so that Mr. Darwin could pull them by the tail; whereas in other parts of the world large lizards are wary enough. The aquatic lizard of the same genus lives on the coast, is adapted to swim and dive perfectly, and feeds on submerged algæ; no doubt it must be exposed to danger from the sharks, and consequently, though quite tame on the land, he could not drive them into the water; and when he threw them in they always swam directly back to the shore. Animals feigning death seemed to Mr. Darwin a remarkable instinct, but he considered that there was much exaggeration on the subject. It struck him as a strange

coincidence that the insects should have come to exactly simulate the state which they took when dead. Hence he carefully noted the simulated positions of seventeen kinds of insects (including an *Iulus*, spider, and *Oniscus*) belonging to the most distinct genera, both poor and first-rate shammers; afterwards he procured naturally dead specimens of some of these insects, others he killed with camphor by an easy slow death. The result was that in no one instance was the attitude exactly the same, and in several instances the attitude of the feigners and of the really dead were as unlike as they possibly could be. Bird-nesting and the habitations of other animals were next discussed, the general conclusion being that though there are various adaptations of inherited instincts to suit varying circumstances, yet that these variations all tend to preserve the species, in the struggle for existence, by conducing to the 'survival of the fittest.' Although he did not doubt that intelligence and experience often come into play in the nidification of birds, yet both often fail; a jackdaw has been seen trying in vain to get a stick through a turret window, and had not sense to draw it in lengthways; Gilbert White describes some martins which year after year built their nests on an exposed wall, and year after year they were washed down. The *Furnarius cunicularius* in South America makes a deep burrow in mud-banks for its nest; and he saw these little birds vainly burrowing numerous holes through mud-walls, over which they were constantly flitting, without thus perceiving that the walls were not nearly thick enough for their nests. After an exhaustive account of various traits of instinct, and difficulties in the way of his theory, explaining all of them, the paper closed with the following general conclusions:—'We have chiefly considered the instinct of animals under the point of view whether it is possible that they could have been acquired through the means indicated on our theory, or whether, even if the simpler ones could have been thus acquired, others are so complex and wonderful that they must have been specially endowed, and thus overthrow the theory. Bearing in mind the facts given on the acquirement, through the selection of self-originating tricks or modification of instinct, or through training and habit, aided in some slight degree by imitation, of hereditary actions and dispositions in our domesticated animals, and their parallelism (subject to having less time) to the instincts of animals in a state of nature; bearing in mind that in a state of nature instincts do certainly vary in some slight degree; bearing in mind how very generally we find in allied but distinct animals a gradation in the more complex instincts, which show that it is at least possible that a complex instinct might have been acquired by successive steps; and which, moreover, generally indicate, according to our theory, the actual steps by which the instinct has been acquired, inasmuch as we suppose allied instincts to have branched off at different stages of descent from a common ancestor, and therefore to have retained, more or less unaltered, the instincts of the several lineal ancestral forms of any one species; bearing all this in mind, together with the certainty that instincts are as important to an animal as their generally correlated structures, and that in the struggle for life under changing conditions, slight modifications of instinct could hardly fail occasionally to be profitable to individuals, I can see no overwhelming difficulty on our theory. Even in the most marvellous instinct known—that of the cells of the hive-bee—we have seen how a simple instinctive action may lead to results which fill the mind with astonishment. Moreover, it seems to me that the very general fact of the gradation of complexity of instincts within the limits of the same group of animals, and likewise the fact of two allied species, placed in two distant parts of the world, and surrounded by wholly different conditions of life, still having

very much in common in their instincts, supports our theory of descent, for they are explained by it; whereas if we look at each instinct as specially endowed, we can only say that it is so. The imperfections and mistakes of instinct on our theory cease to be surprising; indeed, it would be wonderful that far more numerous and flagrant cases could not be detected, if it were not that a species which has failed to become modified and so far perfected in its instincts that it could continue struggling with the co-inhabitants of the same region would simply add one more to the myriads which have become extinct. It may not be logical, but to my imagination it is far more satisfactory to look at the young cuckoo ejecting its foster brothers, ants making slaves, the larvæ of the ichneumidæ feeding within the live bodies of their prey, cats playing with mice, otters and cormorants with living fish, not as instincts specially given by the creator, but as very small parts of one general law leading to the advancement of all organic bodies—multiply, vary; let the strongest live and the weakest die.'"

ANNIE BESANT.



THE Compton Comedy Company, now at work at the Strand Theatre, are at good work. All the comedies given are those that have stood the test of time. Most of the actors and actresses are in love with their art, and love worthily. All the representation is very perfect, as far as words, business and stage management are concerned. Every student of the stage in London should pay a visit to the Strand, and when the Company goes wandering again it should have the support of all the lovers of good plays and good acting in every town in which it pitches its histrionic tent. I am so charmed with the good work done, and so sure that in the future the stage in England will gain much from Mr. and Mrs. Compton and their associates, that I may be pardoned if I point out what appear to me artistic faults here and there. To get rid of the most disagreeable thing first. I have said that the artists are all in love with their art. But to be in love with oneself is not conducive to good acting, and when the chief offender in this way is the chief actor the fault is the more noticeable. To speak plainly, we have too much of Mr. Edward Compton, and I, for one, should have been happier if, *e.g.*, the printed notices and pictures that are used as advertisements had contained some reference to other members of his Company than himself. This is the more to be regretted as Mrs. Compton (Virginia Bateman) at least as much as her husband invests the representations "with artistic merit." Of the little two-

part comedietta, "A Mutual Separation," with which the evening opens, the less said the better. Its humor turns principally upon frequent references to a dead cat and upon the repetition at stated intervals, by each of the characters, of the exhilarating phrase "hay-loft, hay-loft!" The most interesting attempt that the Company has made has been in the production of "Twelfth Night." We are, as we ought to be, grateful to Mr. Edward Compton for the opportunity of seeing this comedy in any other than our mind's eye. We should be grateful, if only for the privilege of seeing Mrs. Edward Compton as Viola. But, in truth, many of the parts are fairly played, and if this one only satisfies the Shaksperian student, that person is, after all, nearly as exacting as the characters themselves. Let me say, once for all, that the representation of "Twelfth Night" is, on the whole, good, and is as much better worth seeing than the majority of theatrical shows as Shakspere is superior to most dramatists. Hence, I hope that my criticism will be looked upon as anxious rather than carping. The "poverty" of materials, "and not the will, consents" to the curtailing or the complete elision of certain stage adjuncts that the completeness with which Shaksperian plays are produced at the Lyceum have made us regard as, perhaps, too essential. Thus the Duke's first line in the second scene:

"If music be the food of love, play on,"

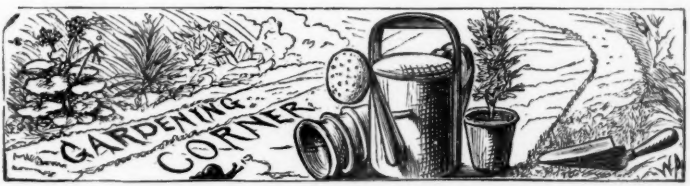
is spoken on a stage empty of all but the speaker. We seem to miss the throng of courtiers, the presence of fair ladies, the stir of silks and satins, the perfume, the lights, the colors, the warmth of all the senses in which the music should be steeped. Again, it is matter for regret that Viola and Sebastian are not both played by one artist. The plan is feasible. Kate Derry carried it out. The play would gain in all ways, and the audience would lose the sense of half-guilt they experience when they have by implication to admit the possibility of mistaking Mr. Calvert's Sebastian for Mrs. Compton's Viola. The guilty sense is intensified by the fact that the two performers wear wigs of not identical color. The only regrettable thing about the performance is the ruthless treatment of the low comedy scenes. Mr. Blythe's Sir Andrew is as heavy as his leaden method of cutting capers, and of Mr. Valentine's Clown Olivia's comment: "You're a dry fool," is only too true. But this is all pardonable. The omission of the charming song, "Oh Mistress Mine," is just forgivable when the Clown has not a singing voice. But the substitution for the old catch, "Hold Thy Peace," whose music is extant and charming; of the roaring out: "Christmas comes but once a year," the cutting of certain of Shakspere's lines, and the interpolation of gag, are not easily condoned. Some strange misunderstandings of Shakspere are notable in the representation. Sir Toby (on the whole, excellent) says the "Tilly vally, the Lady!" of act ii., scene 3, to Maria as if the word "Lady" were her title rather than the outcome of his contempt for her message from her lady.

Malvolio, of whose representative we ought to expect better things, emphasises (ii., 5, 105) the "this" in the line: "To whom should this be." The line "a demure travel of regard" (ii., 5, 59) with its wonderful suggestion of the supercilious slow overglancing of the servants faces by Malvolio, actually became "a demure *travail* of regard." Worse even than this was the complete misreading of "Maria once told she did affect me" (ii., 5, 29) as if the "she" were Maria and not her mistress. Altogether the Malvolio was far from satisfactory. But the Viola was delightful. The only point with which I join issue is the reply to Olivia's enquiry as to her face, "Was it not well done?" (i., 5, 255). "If God did all" is the answer. And this answer is surely the strangest blending of envy, admiration, grief, despair and banter, wrung from her by the beauty of her rival. But, for the rest, the acting is very graceful, very intelligent, and at times beautiful. In the first scene (the two opening scenes as Shakspere wrote them are transposed in representation) her look when (i., 2, 38, 39) her friend tells of another woman who, like her, has lost a brother, gave promise of the excellence that was to come and that came. And among the many little touches of art later in the play let me note the delicate pathos of the line:

"Poor lady, she were better love a dream" (ii., 2, 27).

But Viola-Cesario was at his and her best in the duel scene. Very excellent throughout, two of the actress' finest effects were her helpless looking for help after Olivia, who has gone, her shudder at the account given by Fabian (a part admirably played) of her problematical antagonist, "the most skilful, bloody and fatal opposite." Mrs. Compton got more out of the duel scene (and that wholly by legitimate means) than was made of any other scene in the play, and she played Viola as no other part in the comedy was played. Several others of the company made an approximation to the conception of the part "they were set down for." Two (the Sir Toby and the Fabian) nearly realised what was to be done. But she was the Viola of Shakspere.

EDWARD B. AVELING, D.Sc.



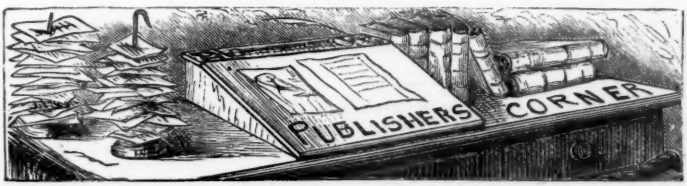
JANUARY.

On this the first day of a new year, and at the commencement of a new volume, we wish those readers who have, in "the year that's awa'" taken an interest in our "Gardening Corner," a "Happy New Year!"

and much success in their horticultural pursuits during its course. If our readers have found in our special "corner," and the system we have followed in cultivating and cropping it during the past year, anything to interest and instruct, we pledge that no effort on our part will be spared to cultivate still further their good opinion. With this in view, we shall from time to time make our papers embrace more or less of every subject that can tend to the advancement of horticulture, give pleasure to its patrons, or advance the best interests of those of our readers who cultivate a garden and expect profit as well as pleasure in that pursuit. But pleasure most; for we do not hold ourselves bound to answer the question: Does gardening pay? It is so difficult to define what is meant by paying. But to anyone asking the question: Does gardening pay? we reply: There is no such thing as absolute value in the world. You can only estimate what a thing is worth to you. Does it pay to keep a carriage? to have a fine library? a collection of costly paintings? to cut your lawn? or to have a barber cut your hair? It is just "as you like it." Viewed in this light, we regard it as a sort of profanation to ask the question: Does gardening pay? One who has the love of rural life, the habit of enjoyment of familiar things, who has a keen susceptibility to Nature such as makes his nerves gently thrill as he enters her homeliest nooks and hears her commonest sounds, he will find pleasure in his garden to profit him more than a thousand fortunes of money or its equivalents. No; such an one will never attempt to compute in figures what daily delights, what freshness and health, his garden yields, to say nothing of the large crop of anticipations he gathers as soon as he perceives the first crop of seedlings pushing through the soil in the genial springtime. To the enthusiastic amateur who has to depend in so many cases on the protection of a cold pit or a frame for wintering those plants which, in conjunction with some choice annuals, go to form the summer glories of his flower-beds and borders, this month and the following are generally trying ones. To such, a few hints on the wintering of Geraniums, Verbenas, Calceolarias, etc., etc., in cold pits, frames, or even in a spare room or outhouse, may be acceptable. Our remarks will aim at that which is thoroughly practical. When such things have to be wintered in store-pots in such places as we have named, they should be prepared for severe frost and a long cover up in darkness and low temperature by being kept dry almost to the drooping point all the autumn. This, with a regular exposure to air whenever it can be done, with a removal of damping leaves, brings on a state of maturity and rest calculated to stand a damp, cold, confined atmosphere and the absence of light with the least possible injury. Where all about the frames or pits and plants is not dry and comfortable, and their inmates not in the favorable condition spoken of, the first mild day should be utilised in taking out the plants, to remove all dead and decaying leaves, and to have all slime rubbed off the pots, etc. Then all about the inside and around the pit or frame should be made as dry as possible. The material on which the pots are placed, if wet, should be replaced with some dry material, such as coarse gravel, with a layer of dry cinder-ashes over the surface. In replacing the plants, do not overcrowd them. The more sickly and tender should be removed to some airy window in the dwelling-house. Under such circumstances the plants will find themselves in a position much more likely to resist a long storm, should it come, than when damp and surrounded with damp. In frosty weather some dry loose material, such as hay, straw, or, what is better, dry fern, should be held in readiness for covering up with snugly. For the protection of a frame, the same material should be packed round its sides. When thick coverings over the glass become necessary, the material should be laid over the sur-

face as loosely as it will lie, as the more air it contains the more effectually is the radiation of the heat of the frame prevented, air being a much better non-conductor than a soddened body of damp material; and if over the loose material some light waterproof covering can be fixed, all will be kept dry and comfortable. If mats alone be the covering used, they should be pulled tightly over the glass, so that they are borne above it by the astragals of the frame lights, and so leave a stratum of air between the glass and the mats, for the reasons already assigned. Attention to these little matters is of vast moment, and there is a right and a wrong, and a good and a bad way of doing everything. When it becomes necessary, from severe and continuous frost at this season, when the sun is low and its influence feeble, to keep the glass covered up for, it may be, three weeks at a time, and when, more especially, Jack Frost has gained a footing to a slight degree inside your pit or frame, great caution is necessary in uncovering and exposing the plants to light and air when the weather changes rapidly to a thaw; we are so apt to experience such an exhilaration of mind and spirits ourselves when we think "Gloomy winter's noo awa," that we are apt to fancy our plants, which have so long been buried alive, would be ready to feel something akin to the same enjoyment, and so they are uncovered and are, alas! thereby exposed to such a reaction, as proves ten times more fatal to them than a few degrees of frost. Plants are living things, possessing all the sensibilities of the most perfect and delicate organisms, and are as susceptible of sudden changes as is the human frame. Many never think of this, or are apt to forget it, and so, as soon as it thaws, off goes the covering, and the plants are as sensibly and injuriously affected by a sudden flood of light, as a human being or any other animal would be by a flood of electric light, after being immured in a dark cell for a similar length of time; and if their organisms are frozen, they are, by a too sudden thaw, ruptured, and mould, rottenness, and death ensues. The covering then should not be hastily removed nor all at once, but as the frost creeps out then by degrees remove the covering and admit air. We will now summarise. The points to be aimed at in wintering plants in cold pits, frames, etc., are: 1st, To keep the plants as dry and in as complete a state of rest as possible all the autumn and early part of winter, for the less watery particles contained in their system, and all about them the less subject are they to injury; for it is, to a great extent, by the expansion of these watery particles by cold that their tissues are ruptured and the plants destroyed. 2nd, When it becomes necessary to cover up, for a length of time, from severe frost, the covering material used should be dry and open, and have a stratum of air between the glass and it. 3rd, When the weather changes from frost to thaw do not uncover at once, but gradually, and not altogether till the thaw is complete.

W. ELDER.



Mrs. Besant has issued four lectures on the French Revolution, delivered last autumn on Thursday evenings at the Hall of Science. They deal with the period between the death of the king and that of the queen,

and thus include the assassination of Marat, and the birth of the Reign of Terror.[1]

Mr. A. B. Moss has issued a little pamphlet, on "Bruno and Spinoza,"[2] which will repay reading. He offers rightful homage to two great men.

Herr Leopold Katscher has republished in book form a series of sketches of remarkable men and women of the nineteenth century.[3] Those of our readers who are German scholars will find pleasure in this ably-written work.

Ingersoll's splendid lecture on "The Liberty of Man, Woman and Child," has not, so far as we know, been published before in its entirety in England. All admirers of the brilliant lecturer should present themselves with a copy of this famous work.[4]

Anecdotes.

A MIDDLETOWN lady, the mother of a bright little boy, was talking to him the other night, just as she was putting him to bed, about the efficacy of prayer, and told him that if he would ask God for anything that he particularly desired, she had no doubt his request would be granted. The little fellow knelt at his mother's knee and prayed to God to send him fifty little sisters and one hundred little brothers. The prayer was never finished, for the mother, aghast at the prospect of having the house turned into an orphan asylum, lifted the boy to his feet and tucked him into bed without a moment's unnecessary delay.

A SHOWMAN exhibiting a picture, said: "Ladies *and* gentlemen, there is Daniel in the den of lions. There are the lions and that is Daniel, whom you will easily distinguish from the lions by his having *a blue cotton umbrella under his arm.*"

A PERSON being asked what a ghost said to him, which he pretended to have seen, answered: "How should I know what he said? I am not skilled in the dead languages."

[1] Four lectures on the French Revolution. By Annie Besant. London: Freethought Publishing Company, 63, Fleet Street, E.C.

[2] "Bruno and Spinoza." By A. B. Moss. London: Watts and Co., 84, Fleet Street.

[3] Charakterbilder aus dem neunzehnten Jahrhundert. Von Leopold Katscher. Berlin: F. Dümmurs, Verlagsbuchhandlung.

[4] "Liberty of Man, Woman and Child." By Col. R. G. Ingersoll. London: Freethought Publishing Company, 63, Fleet Street, E.C.

"YOUR language is wholly uncalled for," as the publisher told the author whose works failed to sell.

APROPOS of the general prevalence of adulteration, the following little fable has appeared in the *Gazette Medicale de l'Algerie*:—Four flies, united by friendship, lived in a certain house. They awoke one morning with a good appetite. The first applied himself to a dish of milk; but, ere long, he died in convulsions, produced by the chalk that was in the milk. The second found a sausage, of which he partook heartily: but the sausage having been colored with aniline, the little creature was presently poisoned. A like fate befell the third fly, who had eaten flour containing a quantity of alum. Filled with despair at the sight of his comrades, and sick of life, the fourth fly betook himself to a fly-paper in a plate, resolved to commit suicide. He sucked up the liquid greedily, counting on a quick release; but, wonderful to relate, instead of dying, he found himself uncommonly refreshed and vigorous. Even the fly-paper had been adulterated!

SHERIDAN, being on a parliamentary committee, one day entered the room as all the other members were seated, and ready to commence business. Perceiving no empty seat, he bowed, and looking round the table with a droll expression of countenance, said: "Will any gentleman move that I may take the chair?"

A YOUNG musician, remarkable for his modesty and sincerity, on his first appearance before the public, finding he could not give the trills effectively, assured the audience, by way of apology, that he trembled so he couldn't shake.

AT a Mechanics' Institute, an adult in a grammar class being asked what is syntax, replied: "Money paid to the Pope for absolution of sins" —(*sin-tax*).

MIKE, speaking of a celebrated musician, said: "He has led a very abandoned life."—"O, yes," replied Scaley, "the whole *tenor* of his life has been *base*."

A YOUNG clergyman having buried three wives, a lady asked him how he happened to be so lucky. "Madam," replied he, "I knew they could not live without contradiction, so I let them have their own way."

A CLERGYMAN was once supplying a pulpit by the sea-side. Thinking to impress the truth more distinctly upon the congregation, many of whom were seamen, he drew the figure of a ship trying to enter a harbor against a head wind. Unfortunately for the success of his metaphor, he knew little of seamanship. After putting the ship into several singular positions, he cried out in a tone intended to be emphatic: "What shall we do next?" "The Lord only knows," exclaimed a disgusted old tar, "unless you let her drift stern-foremost!"

AN Irishman, who was very near-sighted, about to fight a duel, insisted that he should stand six paces nearer his antagonist than the other did to him, and that they were both to fire at the same time. This beats Sheridan's telling a fat man who was going to fight a thin one that the latter's slim figure ought to be chalked on the other's portly person, and if the bullet hit him outside the chalk mark, it was to go for nothing.

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GENERALLY speaking, the negro is supposed to be pious, provided piety loes not prohibit chicken-stealing. One of them was asked the other day oy his minister if he stole any chickens last week? "No, sah, tank goodness;" and then whispered to his neighbour: "Lucky he said 'chickins;' if he'd said 'ducks,' he'd a had me, shuah!"

Epitaphs (curious) Ancient and Modern.

Compiled by CHARLES HERBERT.

The following was copied from an Old Tombstone in Scotland.

"Here lies the body of Alexander Macpherson,
Who was a very extraordinary person;
He was two yards high in his stocking feet,
And kept his accoutrements clean and neat.
He was slew
At the battle Waterloo
Plumb through
The gullet; it went in at his throat,
And came out at the back of his coat."

On a Quarrelsome Woman.

"Here lies, thank God, a woman, who
Quarrell'd and storm'd her whole life through;
Tread gently o'er her mouldering form,
Or else you'll rouse another storm."

On a Stone in the Cemetery of Upton-on-Severn.

"Beneath this stone, in hopes of Zion,
Doth lie the landlord of 'The Lion;'
His son keeps on the business still,
Resigned unto the Heavenly will."

On a Tombstone in San Viego, California.

"This year is saked to the memory of William Henry Shraken, who cam to his deth being shot with Colts' revolvers—one of the old kind, brass mounted, and of such is the Kingdom of Heaven."

Thomas Watson's Monument.

"Doubtful, if Watson die or live here lies
His lesser part, his better mounts the skies.
His better part enjoys eternal light;
His lesser part is dead and out of sight."

On a Tombstone in Worcester Churchyard.

"Martha and I together lived
Just two years and a half;
She went first and I followed after—
The cow before the calf."

William Pepper.

"Tho' *hot* my name, yet mild my nature,
I bore good will to every creature;
I brew'd good ale and sold it too,
And unto each I gave his due."

In the Old Churchyard, Carisbrooke, Isle of Wight.

"This world's a city full of streets,
And Death's the Market Place where all men meet,
If Death were merchandise that gold could buy,
The rich would live, the poor alone would die."

In Horsley-Down Church, Cumberland:—

"Here lie the bodies
Of Thomas Bond and Mary his wife,
She was temperate, chaste, and charitable;
But
She was proud, peevish, and passionate.
She was an affectionate wife and a tender mother;
But
Her husband and child, whom she loved,
Seldom saw her countenance without a disgusting frown,
Whilst she received visitors whom she despised, with
An endearing smile.
Her behavior was discreet towards strangers;
But
Independent in her family,
Abroad, her conduct was influenced by good breeding;
But
At home, by ill-temper.
She was a professed enemy to flattery,
And was seldom known to praise or commend;
But
The talents in which she principally excelled,
Their difference of opinion, and discovering flaws and
Imperfections.
She was an admirable economist,
And, without prodigality,
Dispensed plenty to every person in her family;
But
Would sacrifice their eyes to a farthing candle.
She sometimes made her husband happy with
her good qualities;
But
Much more frequently miserable—with her many failings,
Insomuch that in thirty years' cohabitation he often lamented
That maugre all her virtues,
He had not, in the whole, enjoyed two years of
Matrimonial comfort.
At Length
Finding that she had lost the affections of her husband,
As well as the regard of her neighbors,
Family disputes having been divulged by servants,
She died of vexation, July 20, 1768,
Aged 48 years.
Her worn-out husband survived her four months and two days,
And departed this life, Nov. 28, 1768,
In the 54th year of his age.
William Bond, brother to the deceased, erected this stone."

On Miss Partridge, who died in the Month of May.

"What! shoot a partridge in the month of May!
Was that done like a sportsman—eh! Death, eh!"

On a Fisherman.

"This man by worms was fed,
The worms procured him fish,
But now that he is dead,
The worms will have their dish."

Prize Puzzles.

ANSWERS.

DOUBLE ACROSTIC.

An unfortunate error was made in the second light of this Acrostic, the word chosen ending in R, when it should have ended in I.

L O W
O V E R
N O O N
D O O R M A T
O B O E
N E A R

Light 1.—Ernest Jones's song: "We're low, we're low, we're very, very low."

ANAGRAM.

A hush! all regard C. B.—AS YOU LIKE IT.

REBUS.

Horace:

Heine.
Oxus.
Rodney.
Alexander.
Carlyle.
Eliot.

The names sent, differing from these, are accepted.

CHARADE.—Mush-room.

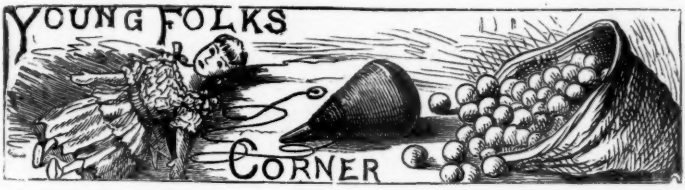
TOTAL MARKS POSSIBLE, 33—Shreds, 25; Auld Reekie, 23; Utile, 21; As You Like It, 15; Hannibal, 3; Old Tom, 3.

PRIZES.

The total number of marks possible was 103. The highest number gained was 83, by B. ALLEN (Shreds), barred by previous success. Next comes A. KETTOCK (Auld Reekie), with 82, barred. Then comes J. T. HADLAND (Old Tom), with 66, and takes the first prize of One Guinea. The second prize, of Half-a-Guinea, is taken by W. JONES (As You Like It), with 64. E. D. FRYER (Utile) and H. FISCHER (Hannibal) have each 47 marks, and the third prize, therefore, goes to the latter, Utile being barred.

THE YEARLY PRIZES.

The first of these prizes goes to B. ALLEN (Shreds), with 274 marks. The second to A. KETTOCK (Auld Reekie), with 268. The third to E. D. FRYER (Utile), with 261.



The Story of Hypatia.

DURING the next few months I propose to give brief sketches of men and women who have fought and suffered for the right of speech and thought. These sketches will purposely be thrown into story form, but will be strictly accurate historically.

The sun was sinking behind the great library of Alexandria, and burnishing into dazzling brilliancy the wide blue waters of its bay, as a girl golden-haired and grey-eyed sat alone in a large and richly-furnished room, gazing through the pillars at the glancing wavelets of the sea. Beautiful she was, with a grave serenity that lent to her a dignity beyond her years, and the beauty of face and figure was set off by the pure white of the trailing gold-edged robe which fell round her feet, and the gleaming golden girdle that clasped her slim round waist. Her day-dream was broken by the sound of an approaching footfall, and she rose as the curtain was lifted, and an aged but still vigorous man, white-haired, white-bearded, entered the room and gave gentle greeting to his only child.

"Hast thou thought, my daughter, of the matter whereof we spoke this morning?" he said as he came forward.

"Yes, my father," spoke the girl, in a full soft tone that fell on the ear like a caress. "I am ready to do thy will."

A smile of gratified pride and pleasure irradiated the old man's face, softening the somewhat stern lines of brow and chin.

"It is well, Hypatia," he answered. "So shall my waning strength

lean on thy young fresh power, and my pupils shall learn yet more swiftly from the lips of the brightest ornament of my school."

And then Theon, the famous mathematician, who had raised to unrivalled position the noble Platonic school of Alexandria, drew his child down beside him on the soft rich cushions whereon she had been sitting awaiting his coming, and they talked long and earnestly of the morrow's work. For on the morrow Hypatia was to take her place as teacher in the great Platonic school, and to face the youth of Alexandria for the first time as preceptress. And well was she fitted for that task; for she was versed in all the knowledge of her day, and none could teach her aught in geometry or in astronomy, or in the science of the time. And so deeply had she drunk of the springs of "divine philosophy" that she seemed to those who had been her instructors to be Platonism itself incarnate, and it was thought no shame to ask her to teach in the mighty school wherein Ammonius and Hierocles had held sway, and to which came students from Greece, and from imperial Rome itself.

And truly Hypatia justified the faith of her father and of her tutors, for we read that "her fame became so great that the votaries of philosophy crowded to Alexandria from all parts." And so pure was she, so gentle and yet so proud, that no word of blame or censure was ever heard against her in the market-place or in the baths of Alexandria.

Unhappily it chanced at that time that the patriarchal chair of Alexandria was filled by a bishop named Cyril, a man haughty and bitterly intolerant. He was surrounded by hordes of savage monks and priests, who fanned the gloomy fire of his hatred against all noble learning and scientific thought. And as the fame of Hypatia's learning spread abroad, and the youth of Alexandria crowded more and more into her lecture-room, and as some who had been attendants at the churches now gathered in the hall where she taught the Platonic philosophy, Cyril determined in his dark mind that this rival should be destroyed, and should no longer be allowed to shed abroad the rays of the pure light of knowledge.

And first he tried to convert her to his gloomy faith, for greater than the triumph of slaying her would have been the triumph of immuring her bright keen brain in the dungeon of

superstition, and of quenching the glory of her intellect under the extinguisher of faith. But the "load of learning" which she "bore lightly as a flower," made it impossible for her to pass through the narrow barbaric gate of his creed, and her keen dialectics exposed the clumsy sophisms of the monks he sent to convert her. Then he determined that she should die, and calling to him Peter the Reader, a sour and brutal fanatic, he bade him take with him a band of the roughest and wildest of the savage monks, and slay "this child of the devil," even as she was returning from her daily task of lecturing in the schools.

So Peter went forth and whispered first to one and then to another, and he told how Hypatia was followed by a devil wherever she went, and how this devil gave her her beauty and her cunning tongue; and how she was destroying the souls of the simple Alexandrian people by her blasphemies and her false philosophy. And gradually the throng of monks grew larger and larger, and Peter deftly led them to a narrow street through which Hypatia must pass. And many of them had in their hands large oyster shells, for a whisper had gone round that the witch's flesh should be scraped off her bones, so that none of her incantations should avail to save her.

And now, see, a young monk comes running swiftly, and gasps as he runs: "She is close at hand." And in a moment her chariot appears, and the fair face is still glowing with the excitement of oratory, and the deep eyes are luminous with the glory of the mind. And now a cry and a surge forward of the crowd and Hypatia's chariot is surrounded by fierce faces and tossing arms, and in a moment the horses are stopped, and as she rises, startled, from her seat, the wiry arms of Peter drag the girl down brutally. Her dream is broken, and for the reverent faces of her listeners she sees the fierce swarthy faces of the Thebaid monks, and as she glances over the howling crowd not a friendly eye meets hers.

"To the Church! to the Church!" cry the torturers, "and let us offer the witch before the High Altar of our God!" And Peter rushes onwards, dragging the half-fainting girl, and the monks surge onwards also, with many a curse and prayer. And now the great Church of Alexandria is reached, and up the aisles, on to the very steps of the high altar, from which the crucified

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Christ looked down on his worshippers, Peter, panting and furious, dragged his unresisting victim. There for an instant Hypatia shook herself free, and looked over the tossing sea of arms and faces, and opened her mouth as though to speak. Her white robe was stained and soiled with that terrible journey, but her face was sweet and serene and strong, and her voice rolled out melodiously over the throng of her foes. But scarcely had the tones rung round the Church, when Peter, fearing that her eloquence might turn the mob from his purpose, yelled out:

"She is a witch! a witch! do not listen to her sorceries. I see the devil at her ear, whispering to her. She is a witch!"

And flinging himself on her, he rent her robe from neck to hem, and tore wildly at her clothes, till they fell in ribbons at her feet, and the tall white girl's form stood naked, dazzling as snow, before the golden altar. And a cry burst from her lips at last, as she stood thus bare before that brutal throng.

And the great dumb Christ looked on.

Then the monks flew at her and beat her, and wrenched out handfuls of her glorious golden hair, and tore her flesh with their nails like wild beasts. And those with shells scraped away her flesh till the bones were visible, and all her body was one gaping dreadful wound. Then they tore her limb from limb, and cried to bring fire to burn the witch to ashes.

And the great dumb Christ looked on.

And at last they gathered wood outside the door, and flung the pieces of her body on the pile, and set a light to it, and sang hymns round the witch's funeral fire, until nought but ashes were left, and these they scattered to the wind and went home rejoicing in their evil work.

And that night Cyril slept soundly, for his rival would no longer draw away his hearers. And Peter slept deeply, for he had drunk himself stupid after his crime. But many of the monks had troubled dreams, and wondered whether indeed their day's work were a righteous one.

And in the great church there were pools of blood, and remnants of human flesh and tangled golden hair.

And the great dumb Christ looked on.

But on that figure of the Christ a splash of blood had fallen as

the murderers tore at their prey, and not all the fourteen centuries, that have passed since then, have availed to wash from the Christ that splash of Hypatia's blood.

ANNIE BESANT.

Real Heroes.

"Lives of great men all remind us we can make our lives sublime,
And, departing, leave behind us footprints on the sands of time."

BENJAMIN FRANKLIN.

PART II.

THERE was in Philadelphia no more hard-working, thorough tradesman than Benjamin Franklin the printer. But when the printer could spare an hour from his trade he gladly passed it in the study of nature and her laws, thus gratifying his deeply rooted love for truth. He was profoundly interested in all forms of science, but the particular branch that had for him most fascination was electricity.

In 1745 the famous Leyden jar was discovered. Electricity and the new discoveries connected with it became the current topic of the day. From the first, Franklin took great interest in the Leyden jar, and passed many of his spare hours in testing its powers, and in reading what had been written on the subject.

"I never," he afterwards wrote, "was before engaged in any study that so totally engrossed my time and my attention as this has lately done, for what with making experiments when I can be alone, and repeating them to my friends and acquaintance, who from the novelty of the thing come continually in crowds to see them, I have, during some months past, had little leisure for anything else."

Franklin procured several jars similar to his own and distributed them among his most intimate friends that they also might study the subject in which he was so deeply interested. To some of them the Leyden jar was but as a new toy, to be played with for a time and then cast aside. Three of them, however, began to take a real interest in electricity. These often met Franklin, and the four men compared the results of their studies.

Many a curious experiment did they make together. They kindled spirits of wine, and lighted candles with the electric spark. They discovered a means of giving electrical shocks, and found out how to amuse the children by means of a spider fashioned out of burnt cork, and set in motion by electricity. One of these scientific friends even invented a figure of George II. then King of England, so constructed that anyone who dared to lift the crown from the head of his Majesty instantly received a sharp electric shock. For two years Franklin gave to the study

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of electricity all the leisure he could spare from trade. At the end of that time, although he was then making nearly three thousand a year, he retired from business, purposing to devote the rest of his life to science.

From this time forward he chose for his especial field of labor, not the electricity produced by means of machines, or by bringing in contact such simple materials as glass, silk, feathers, paper, but that form of electricity, whose effect when it booms, crashes and rolls above our heads we call thunder, and which causes that vivid, lurid flash, that, when it darts across the sky, we name lightning. Franklin was not the first to suggest that thunder, lightning, and such electricity as could be gathered by mechanical means might be different forms of one and the same force; but it was he who first proved this theory to be a fact. He first taught men that the voice of nature, and not that of an angry God, called to them in the rolling thunder, and that even the weird and often death-laden lightning-flash might be brought down by man from the skies and made to labor in his service.

He noticed that just as the lightning takes a crooked, wavy course, so also does the electric spark; that both lightning and electricity have a tendency to take the readiest and best conductor; that both lightning and electricity melt metals, burn some bodies, rend others, strike people blind, destroy animal life, and reverse the poles of magnets.

He had often speculated on the strange attraction for electricity possessed by pointed bodies. If lightning and electricity were, as he believed, forms of the same force, then lightning must be attracted towards points as was a phial full of electric fluid. If this were so, he saw his way to the invention of the lightning-conductor. One stormy summer's day he left his home, and, followed by his son, walked towards a neighboring field. He took with him a kite, made of a large silk handkerchief. At one end of the kite was fastened a piece of sharpened iron wire. This piece of iron wire was the pointed body that he hoped might attract electricity from the clouds towards itself. Attached to the kite was the usual hempen string, only the part held in the hand was silk, and at one end of the string was suspended a common key. Father and son, having let fly their kite, entered an old cow-shed, and awaited the approach of a coming thunder storm. A thunder-cloud appeared to pass directly over their heads, and nothing happened. A wretched sensation of disappointed hope was beginning to steal over Franklin, when suddenly he observed the fibres of the hempen string attached to his kite begin to rise and stand erect, exactly as they might have done had they been charged with electricity from a machine. Then he applied his hand to the key and drew from it electric sparks. So joyful was he at having made a discovery which he believed would benefit mankind, that he afterwards said he would willingly in that moment have laid down and died.

Not very long after this experiment he carried out and perfected his idea of a lightning-conductor. The lightning conductor is simply a pointed metal rod, fixed to the highest part of a building, rising higher than any part of it, and communicating at its lower end with the ground. This rod, being a pointed body and made of metal, attracts the lightning to itself, and the lightning therefore passes downwards instead of into the building. By means of the communication between the lower end of the rod and the earth, the lightning is conducted into the earth, and thus the building is saved from injury.

Franklin's fame soon spread throughout the world. The Royal Society of London made him a member of its body, and presented him with a Copley gold medal. The Universities of Edinburgh, Oxford, and St. Andrew's conferred on him the degree of Doctor of Law, and he was elected member of most of the learned Societies of Europe.

After this success, many years of patient earnest study were devoted by him to the wonders of electricity, and he has left the world richer and wiser by several thoughtful papers, telling the results of his labors. Willingly would he have lived a busy, peaceful student life to the end of his days, but the inventor of the lightning-conductor was something more than a good citizen and an earnest scientist; he was an ardent lover of justice and fair play, not only for his own but for all nations, and he was a profound hater of injustice and oppression.

For some time past war had raged in America. Franklin hated war as he only can hate who really loves his fellow men and women. "*There never was a good war or a bad peace,*" was one of his favorite sayings. Nevertheless, when he found that war could not be avoided, he fought with the bravest. In a while he was styled "General," and had the command of forces. Some years later he was sent as ambassador from America to England.

Up to that time America had lived peacefully under the rule of the Mother Country, as England was then styled by the Americans, but when England, in order to raise money for her own wars, imposed *unjust* taxes on the Americans, the latter were *justly* indignant. They declared that as they were unrepresented in the English Parliament, the English had no sort of right to tax them.

Franklin undertook the important mission of trying to arrange matters between the two nations. He did his best, in concert with England's great statesman, Pitt, to bring matters to a peaceful settlement, but was unable to avert the famous American war of Independence, in which the great Washington won his laurels, and which led to the independence of America.

On the 4th July, 1776, was signed one of the grandest and most important documents of history, the famous "Declaration of Independence." America, from that time forward, was no longer a colony dependent on England, but a free country, under the name of the United States of America, with George Washing-

ton for President. Soon afterwards Franklin was sent as envoy from America to France. He gained the consent of France to assist the new Republic with loans of money, with troops if need were, and also induced her to declare publicly her approval of American Independence. At the Court of Versailles Franklin appeared as representative of the American Republic, wearing the dress of an American farmer. "His straight unpowdered hair," says Madame Campan, "his round hat, his brown cloth coat, formed a singular contrast with the laced and embroidered coats, and powdered and perfumed heads of the courtiers of Versailles." When Franklin returned to Philadelphia from a long stay in France, his fellow-citizens greeted him with pealing of bells and firing of cannon. Soon afterwards he was chosen President of the State of Pennsylvania. In the eighty-fifth year of his age, surrounded by children and children's children, he passed away, peacefully and painlessly, from the world he had loved so well. To him might truly be applied the words of his friend, noble Thomas Paine: "The world is my country, and to do good my religion."

When the body of the great philanthropist philosopher was laid in the grave, beside that of his dearly-loved wife, two thousand people attended his funeral, all the bells of the city were muffled and tolled, the flags of the harbour were raised half-mast high, and from time to time the sound of discharges of artillery echoed through the town, reminding the citizens that the man whose long life of loving unselfish toil, of steadfast purpose and unswerving, untiring devotion to truth had ennobled them and their city, was no longer in their midst.

Thus died, universally beloved and honored, one of the most famous men of the Eighteenth Century, and one who, by dint of thoroughness, earnestness, fixity of purpose, and strength of will, had worked his way up from a humble and obscure station to a foremost place in the world's history.

Children, it is pleasant to think that Benjamin Franklin, a tallow-chandler's son, and once a poor, hard-working apprentice, rose to be President of the State of Pennsylvania, Ambassador from France to England, and last, not least, inventor of the lightning-conductor, and discoverer of the identity of lightning and electricity.

J.

Puzzles.

SIMPLE ACROSTIC.

In this puzzle, the first letters of the names of the monarchs described make up the whole word required.

My whole is made up of all things nice,
Meat, plums and suet, sugar and spice.

1.

A cruel persecutor of those who disagreed with her in religion.

2.

A woman who helped in murdering her royal husband.

3.

A Roman Emperor famous for his cruelty.

4.

He lost his head for breaking his country's laws.

5.

Six of this name have reigned in England.

6.

Beautiful, but wicked, she lost her head in a country she claimed to rule.

7.

A successful queen, but as persecuting as No. 1, her sister.

8.

A great English king who freed his country from invasion, and tried to cure his people's ignorance. He is rightly called "the Great."

9.

Conqueror of Jerusalem, and afterwards Emperor of Rome.
(This puzzle counts as much as a "Nut.")

CHARADES.

My whole attracts; my first is a girl: my second is for catching.
My whole traps my first, who may be sitting on my second.

RIDDLES.

What is the difference between a soldier and a woodman?
What step must I take to remove the letter A from the alphabet?

NUTS FOR SHARP LITTLE TEETH TO CRACK.

3 horses are worth 5 cows, and 4 cows cost £17. How much are 20 horses worth?

What must be the least number of soldiers in a regiment to admit of its being drawn up 2, 3, 4, 5, or 6 deep, and also of its being formed into a solid square?

ANSWERS TO LAST MONTH'S PUZZLES.

CHARADES.—Lap-wing. Bar-gain.

REBUS.

Rood, door, rod, or (used for gold in heraldry), do.

RIDDLES.

Because he is learning. A past Y (a pasty).

CRACKED NUTS.

(1.) Let x denote the price of 1 horse,
And „ y „ „ 1 cow.

$$\therefore 9x + 7y = 300 = 117x + 91y = 3{,}900.$$
$$6x + 13y = 300. \quad 42x + 91y = 2{,}100.$$
$$75x = 1{,}800.$$
$$x = 24.$$

By substituting 24 for x in the 1st equation, $216 + 7y = 300$

$$7y = 300 - 216.$$
$$7y = 84.$$
$$y = 12.$$

£24 = price of 1 horse.
£12 = „ 1 cow.

XUM

(2.) Let x denote the price of the harness.

$\therefore 2x =$ „ „ horse.

$3x + \frac{3x}{2} =$ „ „ chaise.

$$\therefore x + 2x + 3x + \frac{3x}{2} = 60.$$

$$2x + 4x + 6x + 3x = 120.$$

$$15x = 120.$$

$$\therefore x = 8.$$

£8 = price of the harness.
£16 = „ „ horse.
£36 = „ „ chaise.

TOTAL MARKS POSSIBLE, 28.—Fontonore, 28; Young Mathematician, 28; Our Corner Man, 28; Buzz-Buzz, 24; Wanda, 24; Young Chemist, 24; Floss, 24; Pussy, 20; Albigeoise, 20; Mignonette, 8: Cromwell, 8; Jumbo, 4.

TO CORRESPONDENTS.—OUR CORNER MAN: No; you will see they go on.

PRIZES.

The total number of marks possible is 88. The only competitor who has gained these is W. RIMMER (Young Mathematician), who is barred by his previous success. R. WARRINER (Fontonore) comes next with 84, and takes the first prize. W. R. LANGLEY (Our Corner Man) follows with 79, but is barred. So the second prize falls to A. D. NOON (Young Chemist). The third goes to R. M. HADLAND (Floss), with 72.

YEARLY PRIZES.

And now for the yearly prizes. Some who did well at the beginning did not persevere, and thus lost all chance of winning in the annual competition.

First Prize: W. RIMMER (Young Mathematician), 340.
Second Prize: R. WARRINER (Fontonore), 303.
Third Prize: W. R. LANGLEY (Our Corner Man), 297.

YOUNG FOLKS' PUZZLE-CORNER RULES.

ANY girls and boys under 16 years of age may send answers to any five (not more) of the puzzles given on pp. 62 and 63. Each "nut" cracked gains twice as many marks as one of the other riddles. Each must choose a fancy name and stick to it, and send with it the first time the real name and address. It is enough afterwards to sign the fancy name, but this must never be left out. All answers must reach the Puzzle Editor, 63, Fleet Street, London, E.C., on or before the 12th of each month.

Every three months three books will be given as prizes to the three young people who have gained most marks. When anybody has won one of these, he or she cannot win another during the year, but quarterly winners may try for the yearly prizes of three books, given to those who have gained most marks during the year.

London: Printed by ANNIE BESANT and CHARLES BRADLAUGH, 63, Fleet St., E.C.